

ACADEMIC LITERATURE REVIEW

INTERACTION OF IFRS 9 AND LONG-TERM INVESTMENT DECISIONS

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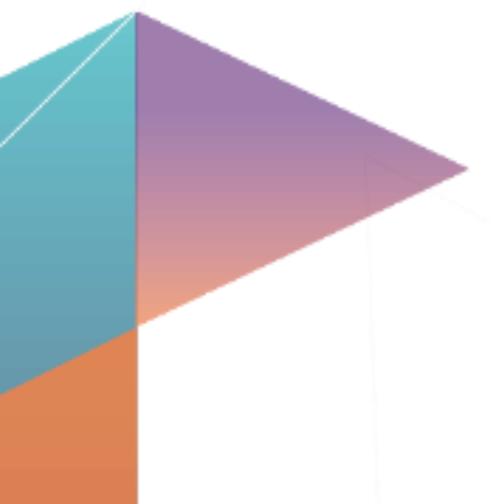


EFRAG

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Executive Summary

In January 2018, the international financial reporting standard IFRS 9 *Financial Instruments* became effective (although entities undertaking insurance activities are permitted to apply IFRS 9 on or after 1 January 2021), changing the way companies account for changes in value in equity instruments designated at fair value through other comprehensive income (OCI). We review contemporary academic literature to shed some light on the possible effects of this regulatory change on investment decisions and strategies of long-term investors. In particular, we examine relevant research in understanding long-term investors' use of information for decision making and their possible reactions to the changes in accounting policies of IFRS 9 related to the removal of recycling (reclassification adjustments) for available-for-sale (AFS) financial assets measured at fair value through OCI. No empirical evidence of the adoption of IFRS 9 was not available.

Our review addresses the following specific questions:

- How does presentation format of the financial information influence investors' behaviour?
- How value relevant are OCI and AFS related gains and losses?
- What are the pros and cons of recycling?
- How do accounting requirements influence investment strategies?
- What factors influence long-term investors' investment strategies?

To address these questions, we focus mainly on accounting and finance journals published after 2005. While a European perspective would have been desirable, we have also included research under other accounting regulations due to scarce literature, especially on the recycling issue. Still we believe that this review will be useful to the standard setters, accounting profession and academic accounting community as a whole.

Main Findings

How does presentation format of financial information influence investors' behaviour?

Some scholars propose that investors and other users of financial statements possess limited attention and processing power. Therefore, presentation format would matter and enhance the transparency, usefulness and value of the accounting information, but also the way investors use information. Others argue that presentation prominence is not significant, because investors are rational users of information and can properly interpret information disclosed in the financial statements. The findings from prior studies are somewhat inconclusive. For example, a recent study on IFRS 9 and adjustments to fair values of corporate liabilities found that the investors are more likely to obtain information on credit risk changes, when information was included in OCI than in profit or loss. Further, investors may consider disaggregated income figures, presented as components, more useful. Moreover, a persistent and familiar location for the information enhances information usefulness. Generally, there is an understanding that investors and other users of financial statement information can more easily, quickly and completely review and absorb information presented in profit or loss.

How value relevant are OCI and available-for-sale (AFS) related gains and losses?

Value relevance research assesses how well accounting amounts reflect information that investors use. By examining the value relevance of accounting amounts, researchers evaluate the usefulness and relevance of accounting numbers for investors in their economic decision-making. Value relevance studies show inconclusive results regarding which one, profit or loss or comprehensive income (CI), has more explanatory power. For example, findings from recent studies using samples of European listed companies indicate that profit or loss is more value-relevant than CI, but that total OCI provides additional information beyond profit or loss. Findings also suggest significant differences in the incremental value relevance of the total OCI across European countries, likely caused by countries' characteristics, such as sources of funds (credit/equity and insider/outsider) and legal systems. The very few studies investigating the value relevance of various components of OCI, for example unrealised gains and losses on AFS securities, have also found inconclusive results. Overall, it has been suggested that the information value of OCI relative to profit or loss is not well understood in practice.

What are the pros and cons of recycling?

There is limited empirical evidence about the benefits and costs of recycling. Regarding benefits, there is some evidence that the recycling of AFS gains and losses from accumulated OCI into profit or loss helps predict future bank performance, and that net unrealised gains and losses on AFS securities are positively associated with future earnings. Thus, results indicate that investors may consider recycling value relevant and useful for improving their decision-making process.

From a cost perspective, some studies point out that recycling may bring unnecessary complexity to financial statements preparers. Further, scholars have mainly considered OCI gains and losses to be transitory, in part because they are unrealised, which limits the usefulness of such items for predicting future cash flows. Thus, scholars question whether recycling indeed adds any real value to investor decision-making. Others argue that investors may not accurately differentiate the pricing between unrealised and realised gains and losses if no recycling is done.

How do accounting requirements influence investment strategies?

Researchers suggest that accounting regulations and requirements have had and will continuously have a major effect on long-term investors, such as banks, life insurers and pension funds. Early, mainly US-based, evidence on how banks react to new accounting standards, affecting or not their regulatory capital, indicates concerns about volatility in reported equity and that banks may change their investment portfolio management. Research also indicates that banks use realised AFS securities gains and losses to smooth earnings, or classify fewer securities as AFS, thereby increasing regulatory capital. The scarce evidence on European banks addresses how changes in regulation may have affected bank performance, the drivers of bank credit risk and risk-taking behaviour. For example, studies indicate that one third of European banks reclassified non-derivative financial assets held for trading and financial assets to improve their key financial ratios.

Some evidence on pension portfolio investments shows that portfolio managers may have shifted from equity to debt securities in the periods surrounding the adoption of the new pension accounting standards. There is, however, no clear evidence on whether the shift from equity to debt securities in pension plans reduced the volatility of OCI. Further, more recent studies examine the effects of IAS 19 (revised), which increases expected pension-induced equity volatility by eliminating the so-called 'corridor method'. Findings indicate that this accounting regulation change may result in firms reconsidering their pension investment decisions by shifting their pension assets from equities to bonds.

What factors influence long-term investors' investment strategies?

Besides accounting regulation and related regulatory changes, many other financial, social or organisational factors influence the investment strategies of long-term equity investors. One primary factor influencing investors is past, expected and/or realised returns on different asset classes. First, past investment returns are important drivers of investment policy. Second, if the realised return on the investment does not meet with the investor's expectations, this may cause changes in actual portfolio weights. Many empirical studies have examined the effect of taxation on corporate shares, asset prices and portfolio realisation. Corporate and individual taxes may significantly influence the investment and divestment decisions.

Implications for standard setters

The main conclusion of this review is that the information provided in the financial statements should be useful for long-term investment decisions. The limited academic evidence on the effects of IFRS 9 and related recycling issues make it difficult to draw conclusions about the possible effects of accounting requirements on long-term investors' investment strategies. Nevertheless, we suggest that standard setters may consider that recycling may be seen as a complex issue and that investors and other users of financial information might not clearly understand the issue. From a theoretical perspective, it seems still somewhat unclear how to distinguish between profit or loss and OCI. Under such circumstances, providing alternative solutions or removing options may not provide the desired effect. Therefore, it is extremely important that new standards are developed through a genuine debate with various professionals in the field as well as other standard-setters. Furthermore, we would like to emphasise the importance of accounting regulation for the financial markets and the economy overall. Thus, weighing the benefits of recycling against the costs appears to be an important matter to consider in future standard setting.

The need for further research

This review highlights the need for more research to increase our understanding of and address how investors price, evaluate and respond to OCI and its components. Especially, the area of recycling appears to need further research and exploration. There is a lack of studies on value relevance, using cross-country samples or focusing on certain industry sectors. Further, understanding how changes in accounting regulation influence long-term investors' behaviour regarding equity investments is an important issue, given the impact it may have on the economic system.

1. Introduction

Equity investors are considered a very important stakeholder group of the company, as they are often the primary capital providers. There are different types of equity investors, such as 'inside' equity investors (i.e. owner-managers in family firms), who can access price-sensitive information from within the firm and 'outside' equity investors, who rely on publicly available information. Different types of equity investors not only have different access to information, but also have different information needs. This review focuses mainly on outside equity investors.

Investment horizon is one of the most important criteria considered in many investment decisions (CFA Institute, 2010). The time horizon of the investment may vary between short- and long-term¹. In this study, we regard the following groups as long-term investors in equities: banks and other financial institutions, pension funds, various types of insurance companies (life insurance, property insurance) and other types of investment companies such as mutual funds.

Investors decide among various assets to allocate money to, for example, shares, bonds, real estate, and gold. Literature classifies the allocation decision loosely as 'strategic' and 'tactical', but there is no generally accepted definition of what classes of securities or assets belong where (Trzcinka, 1999). Some of the strategic decisions relate to active vs. passive investing, equity vs. fixed income, and international vs. domestic investing. For the purpose of this study we do not further define the term strategic, but use strategic in a broad sense, referring to decisions and judgements regarding equity investments mainly using accounting information.

While accounting information may take many formats, the information needs of equity investors generally relate to the amount, timing and risk of future cash flows. Thus, for information to be useful, it should aid in estimating those. Prior research indicates that the most important information sources for professional equity investors, such as fund managers, buy-side and sell-side analysts, are direct contact with company management and financial statements (Gassen and Schwedler, 2010).

¹ While the investment horizon, i.e. the total length of time that an investor expects to hold a security or a portfolio, is clear, defining long-term investment is not easy. The investment horizon likely depends on the investor's personal preferences and type of asset under consideration. Using bonds as a benchmark, we define a long period of time as 10 or more years for a holding equity investment strategy (<https://www.investopedia.com>).

Based on IAS 1 (IASB, 2007), financial statements aim to provide information about the financial position, financial performance, and cash flows of a company. Thus, information related to financial statements and performance is in focus in this study.

To report about performance, a company complying with IFRS has currently to provide a statement of profit or loss and other comprehensive income (OCI) for the period (IAS 1.10). The company may report performance in two different formats: i) presenting all as a single, continuous statement, i.e. the statement of comprehensive income (CI), or ii) in two separate, but consecutive statements so that the company first presents profit or loss as a separate statement, immediately followed by a statement of OCI. No matter format, the same total OCI number will be reached, but the two formats show the OCI information in different locations. In addition to the so called one-statement and two-statement formats of performance, US GAAP previously also allowed comprehensive income to be reported in a non-performance-based statement, i.e. among shareholders' equity, but FASB eliminated the latter option in 2011 (Du *et al.*, 2015). Some of the research referenced later in this review may refer to the USA before the elimination of this option.

While profit or loss sums up the current performance results of corporate operations, thus indicating current financial performance, OCI rather presents corporate information about potential income and cash flows, which may be realised in the future. Thus, information presented in OCI involves some degree of uncertainty. Although we recognise that OCI and profit or loss are conceptually different, academics, regulators and practitioners have for long discussed the definition of OCI as well as reporting location of OCI. IASB Chairman, Hoogervorst (2012) stated:

'We also have a problem defining what income is and how to measure it. The distinction between net income and OCI, however, lacks a well-defined foundation ... the meaning of OCI is unclear. There is a vague notion that OCI serves for recording unrealised gains or losses, but a clear definition of its purpose and meaning is lacking'. (IASB Chairman, Hoogervorst, Amsterdam, 20 June 2012).

Likewise, the interaction between OCI and profit or loss still causes debate, especially regarding the recycling concept and when or which OCI items should be recycled (Yong *et al.*, 2016). IFRS 9 *Financial Instruments* introduced a new way companies account for changes in investments in equity instruments at fair value.

To shed some light on the possible effects of this change on investment decision of long-term investors, EFRAG has called for a review of extant academic knowledge, based on a request for advice from the EC. A literature review is also motivated, as the phenomenon at this point of time cannot be empirically studied due to the fact that the Standard became effective on 1 January 2018.

Therefore, this review of contemporary academic literature aims to identify, consider and evaluate previous research in order to understand possible impact of accounting requirements on long-term investors' investment strategies. In particular, we examine such academic research that we consider relevant in understanding long-term investors' use of information for making investment decisions and their possible reactions to the changes in accounting policies of IFRS 9 related to the removal of recycling² (reclassification adjustments) for available-for-sale (AFS) financial assets measured at fair value through OCI. Our review aims to answer the following specific questions:

- How do presentation of financial information influence investors' behaviour? (Chapter 3)
- How value relevant are OCI and AFS related gains and losses? (Chapter 3)
- What are the pros and cons of recycling? (Chapter 3)
- How do accounting requirements affect investment strategies? (Chapter 4)
- What factors influence long-term investors' investment strategies? (Chapter 4)

Compared to other reviews on OCI (e.g. Skinner, 1999; Rees and Shane, 2012; Black, 2016), we review mainly studies involving regulation related to financial instruments and, in particular, AFS securities (equity investment).

To identify relevant literature on this topic, we followed the recommended steps by Webster and Watson (2002). First, we did a keyword search using available academic databases, such as Business Source Complete, ScienceDirect, Wiley Online, Emerald and Taylor & Francis Journals Complete.

² While the International Accounting Standards Board (IASB, IAS 1.7) uses the term 'reclassification adjustments' (IASB, 2014), a more common term in practice is 'recycling', which we use in this study.

The keywords used for the search were: IFRS 9, OCI, financial assets, available-for-sale, recycling, reclassification adjustments, gains and losses realisation, equity investment, portfolio management, and trading, among others. Second, we reviewed the results, mainly focusing on publications from 2005 and published in ABS³ ranked 3 and 4 stars accounting and finance journals. In addition, we selectively reviewed pertinent articles from lower ranked academic journals (mainly finance and accounting journals), for example *Accounting in Europe* and *Accounting and Finance*, as those were considered highly relevant. We also added relevant conferences proceedings. Third, we reviewed references of publications identified in step 1 and 2 (going backward). Fourth, we identified publications that cited the key publications (going forward). We continued until reaching saturation of the publication search, i.e. a stage where new publications did not appear to add new theories or concepts (Webster and Watson, 2002). Further, the authors used researcher triangulation to ensure that no relevant publications were dismissed during the literature search. Research assistants were employed for the data collection alongside the authors.

This review is structured as follows: Section 2 provides a brief overview of the current requirements and forthcoming changes in IFRS 9. Section 3 gives a summary of previous research related to investors' understanding and use of accounting information as presented in OCI or elsewhere on their decision-making as well as of existing value relevance studies. Section 3 also includes prior empirical research and analysis on recycling, in particular related to AFS securities. Moreover, some studies on country differences are reported. Section 4 discusses some main factors affecting the asset allocation of long-term equity investors beyond accounting information and regulation and factors that influence the average holding period and disposal decisions for investments in equity instruments of long-term equity investors. Section 5 concludes with a brief analysis, some recommendations and suggestions for further research.

³ To find high-quality journals, we used the ratings provided by the UK-based Association of Business Schools (ABS) in its published Academic Journal Guide, 2015.

2. Overview of changes related to IFRS 9 *Financial Instruments*

Accounting for financial instruments is regarded one of the most important and difficult areas of financial reporting. The international financial reporting standard, IAS 39 *Financial Instruments: Recognition and Measurement* (IASB, 2003), requires companies to recognise adjustments to fair values of its equity instruments and to record any holding gains or losses in profit or loss (thus affecting net income) or OCI. For investments in equity instruments that are classified as AFS, the current standard requires both recycling (or reclassification adjustments according to IAS 1.7) and recognition of impairment losses, when subsequent changes occur in equity investments measured at fair value.

Recycling of an item of financial performance means reporting the specific item in comprehensive income in more than one accounting period, because the nature of the item is considered to have changed in some way over time. For example, unrealised gains, which have been reported in the comprehensive income statement under remeasurements, are, in a later period when realisation occurs, again recognised and reported as income, but under the subtotal profit or loss for the period. Therefore, certain income items, which users may potentially regard as value relevant, will never pass through profit or loss for the period, if such items are not recycled. In their analysis of the IASB comprehensive income project, van Cauwenberge and de Beelde (2010, p. 6) conclude that “the motivation for recycling is the concern that early recognition of fair value measurement pre-empts the point of realisation as a recognition signal”.

International Financial Reporting Standard 9 (‘IFRS 9’) *Financial Instruments* is effective for annual periods beginning on or after 1 January 2018. Entities undertaking insurance activities are permitted to apply IFRS 9 on or after 1 January 2021. In accordance with IFRS 9, equity instruments are measured at fair value with changes in fair value recognised in profit or loss (‘FVPL’). At initial recognition, an entity may however make an irrevocable election to present changes in the fair value in other comprehensive income (‘OCI’) on an instrument-by-instrument basis (the ‘FVOCI election’). This FVOCI election is not available for equity instruments that are held for trading or contingent consideration recognised by an acquirer in a business combination. If an entity applies the FVOCI election, it does not assess these instruments for impairment and cannot reclassify in profit and loss gains or losses previously recognised in OCI on disposal of these instruments.

The IASB motivate the prohibition on recycling for the OCI option by stating that income components should only be recorded once (van Cauwenberge and de Beelde, 2010). Investors, analysts and other users of financial statements have, however, insofar largely relied and focused on profit or loss as the main indicator of corporate performance, and critics suggest that financial statement users may oversee OCI income items completely. Therefore, users would likely have to change their way of analysing accounting information because of the removal of the recycling requirement. From a theoretical perspective, the removal would indicate “a re-evaluation of comprehensive income and of fair value accounting in general” (van Cauwenberge and de Beelde, 2010, p. 6).

EFRAG noted in its Endorsement Advice to the EC on IFRS 9, that the prohibition of recycling through OCI may be considered limiting the relevance of the information and this could especially have an impact on long-term investors. Some scholars argue in the opposite direction. For example, Rees and Shane (2012) state that if recycling does not provide better information to users, then this complex accounting method should be abandoned in favour of a more straightforward practice of reporting comprehensive income in one performance statement, and with earnings per share (EPS) based on comprehensive income. Others have criticized the continuous single statement format, claiming that it is likely to “bury net income in the middle of the comprehensive income statement” and that such a format gives both income concepts the same significance despite their conceptual differences (Du *et al.*, 2015). Alexander *et al.* (2017) note that before eliminating recycling, IASB would have to decide which performance concept, profit or loss or comprehensive income, is to become the main performance concept in financial reporting⁴. Also, Detzen (2016), reviewing the historical developments and recent debates about performance reporting, concludes that a fresh start in performance reporting appears to be needed conceptually, but is not about to take place in the near future.

⁴ We note that the Conceptual Framework of Financial Reporting describes the statement of profit or loss as the primary source of information about an entity’s financial performance for the period.

3. Review of previous research on effects of presentation of performance on investors' behaviour

In this section we will discuss previous research on investors' understanding and use of accounting information with regard to the location and format of accounting information as well as the value relevance of accounting information. Further, the existing, very few studies on recycling will be reviewed briefly.

3.1. Research on presentation format of financial information

Accounting researchers have investigated how comprehensive income (CI) and its various presentation formats influence users of financial statements. Behavioural researchers have, in various experiments, focused on the differential effects of reporting formats on the judgments of financial statement users, such as analysts and individual investors. Further, prior research investigates the usefulness of various OCI components separately. Some mainly US-based research evidence is provided below.

Early US-based research has investigated how the format or location of the information affect the way in which investors use information. Part of those studies relate to the long-standing recognition vs. disclosure debate, under which some researchers propose that investors process items differently depending on whether they are disclosed in footnotes or recognised in the financial statements. Usually, these researchers argue that presentation format matters for the transparency and valuation of accounting information. For example, Hirshleifer and Teoh (2003) assume that due to the investors' limited attention and processing power, investors can more easily process and take in salient information compared to less salient information. Thus, due to limited attention ability, equivalent information disclosed in different format may have different impact on investors' perceptions. Other scholars, drawing on the efficient market hypothesis (EMH), argue that presentation prominence is not significant, as market participants are rational users of information and can properly assess information disclosed in the financial statements. Possible errors in interpretation would thus be quickly arbitrated away.

Hirst and Hopkins (1998) use psychological theory to propose that presentation prominence might influence how capital markets interpret accounting information. In their experiment, they analyse buy-side analysts' abilities to evaluate firm performance using CI when earnings management via the sale and subsequent repurchase of AFS securities was prevailing. The results indicate that buy-side analysts can detect earnings management and consider this information in their stock price judgments only when CI is presented in a statement of comprehensive income, not in a statement of changes in shareholders' equity (SSE). In addition, they find that buy-side analysts more easily can detect earnings management and utilize this information for making evaluations of reporting quality and growth opportunities in such situations when comprehensive income is presented in a statement of comprehensive income. Another study (Maines and McDaniel, 2000) also supports the above findings, as it shows that the participants judged corporate and management performance differently under low and high OCI volatility conditions only when the information was presented in a performance statement as compared to a statement of changes in shareholders' equity (SSE). However, contrary to those results, the study by Chambers *et al.* (2007) indicates that investors weigh OCI reported in SSE more heavily than OCI reported in a performance statement. While the findings of these experiments suggest that presentation format and how information is presented in the financial statements influence investors' decision-making, the findings do not allow any clear conclusions other than the fact that presentation format appears to matter to investors.

Presentation prominence of OCI may also influence managers' financial reporting decisions. Lee *et al.* (2006) find in their study that companies in the property-liability insurance industry "cherry pick" AFS investments to sell, recognise disposal gains in the income statement, and leave unrealised losses in the less-prominent SSE. These results are largely consistent with findings by Bamber *et al.* (2010), who suggest that managers with strong incentives to manage earnings are more likely to avoid reporting OCI in a performance statement. Further, Hunton *et al.* (2006), investigating whether the presentation format of CI influenced managers' selective sale of AFS securities in order to manage earnings, found that financial executives prefer a less transparent presentation format to manage earnings.

In June 2011, FASB issued ASU 2011-05, which eliminated the option for companies to present OCI in the SSE. FASB expected that the removal of the option would enhance comparability, consistency, and transparency of financial reporting as well as increase the significance of such items that were reported as OCI (Kim, 2016). Empirical results by Kim (2016) indicate that the majority of large US firms (80 % of S&P 500 firms) reported OCI in a separate statement of OCI and not as a single income statement after ASU 2011-05.

Contemporary US-based research has also investigated other effects of ASU 2011-05. For example, Shi *et al.* (2017) argue that ASU 2011-05 will greatly reduce the continuity of OCI from one period to the next, making OCI more volatile. Because OCI items are transitory in nature, the increased OCI volatility makes firms' inherent risk more transparent to investors (Huang *et al.*, 2016). Further, Shi *et al.* (2017) found that the coefficient for the effect of total comprehensive income on stock returns, when OCI was presented in SSE was 0.33, but 0.76 when OCI was presented in the income statement or statement of comprehensive income in the post ASU 2011-05 period. Thus, they propose that ASU 2011-05 significantly increases the ability of profit or loss (net income) to influence stock prices. As OCI and profit or loss are intertwined, the more salient presentation of OCI enables investors to better interpret earnings. In summary, the researchers suggest that the new standard improves transparency and usefulness of the reported OCI information.

Du *et al.* (2015) investigated the effects of different presentation formats on nonprofessional investors' judgments. They used an experiment with graduate students in the role of investors. The results suggest that the participants were more likely to incorporate OCI information presented in the one-statement format than in the two-statement format. Further, the participants assigned more weight to OCI and perceived OCI to be relatively more important in the one-statement format than in the two-statement format, especially in such cases when the company suffered economic loss. Thus, the results by Du *et al.* (2015) indicate that financial statement users process information about OCI differentially even after ASU 2011-05, depending on the presentation formats being one- or two-statement formats.

Lachmann and Wohrmann (2015) investigate in the IFRS setting whether the difference in presentation influences knowledgeable non-professional investors. Their case relates to accounting for adjustments made to the fair values of corporate liabilities. IAS 39 required those gains or losses to be recognised in net income (profit or loss), as they are caused by changes in the firm's own credit risk. Based on prior research, such gains and losses in net income have been found to confuse financial statement users. Therefore, IASB made the changes to IFRS 9, requiring credit risk effects to be presented in OCI instead of net income. The results by Lachmann and Wohrmann (2015) indicate that the participants of their experiment (i.e. auditors, used as proxy for non-professional investors) were more likely to obtain the information on credit risk changes, when information was included in OCI than in profit or loss. The perceived importance of credit risk information is only slightly lower under the OCI presentation format, and presentation format does not influence the risk of misinterpreting a credit risk gain (Lachmann and Wohrmann, 2015). On the other hand, the evaluation of overall firm performance is less biased, if fair value gains are included in OCI. Moreover, information acquisition, the interaction of weighting and credit risk evaluation mediate the effect of presentation format on firm performance evaluation (Lachmann and Wohrmann, 2015, p. 21).

Finally, one stream of research investigates the effects of separating OCI into its various components. Such study results are beneficial for researchers, standard setters, and regulators for investigating the incremental usefulness of each OCI component separately. Among others, Lipe (1986) found that investors may obtain useful information if firms disaggregate income into its components, and that the component's persistence will affect the decision usefulness. After examining eight various performance measures (including net income), also Barton *et al.* (2010) reported that CI was the least predictable performance measure. For individual components of OCI, Chambers *et al.* (2007) reported, on the contrary, that presentation mattered only for the minimum pension liability item. Investors seemed to weight pension adjustments reported in a performance statement negatively, but pension adjustments reported in SSE positively.

Despite the somewhat mixed results of prior studies, Bouwer *et al.* (2014) argue that the IASB, investors and companies are all well aware of the presentation (format) effects on decision-making. While the explanations may be related to the effect on detection and processing of information (Hirst and Hopkins, 1998), the effects on information weighting (Maines and McDaniel, 2000) or yet another theory. In practice it is rather evident that users can more easily, quickly and completely absorb the information presented in the income statement (Bouwer *et al.*, 2014).

3.2. Research on value relevance of OCI and its components

Another stream of research has investigated the effects of presentation formats of OCI or other information on a company's market return. The term 'value relevance' refers to the ability of accounting amounts to reflect the underlying economic value of a firm (Hung and Subramanyam, 2007, p. 639). Value relevance is measured by stock market prices, which are considered reflecting market participants' beliefs about future cash flows and discount rates. In other words, accounting amounts are value-relevant if they are associated with stock prices, and value relevance research assesses how well accounting amounts reflect information that investors use (Barth *et al.*, 2001, p. 77). Scholars argue that examining the value relevance of accounting items is important, because there is a need to evaluate the usefulness and relevance of accounting numbers for investors in their economic decision-making (e.g. Mechelli and Cimini, 2014).

Van Cauwenberge and De Beelde (2010, p. 84) identify two types of value relevance research as follows: (i) relative association studies, which compare the association between prices (or returns) and alternative income measures (NI or CI); and (ii) incremental value relevance studies, which examine whether the OCI components, once added to NI, will improve the value relevance. Thus, incremental value relevance examines whether for example the OCI offers useful information to investors beyond what other accounting items (e.g. NI, book value or BV, etc.) provide (Mechelli and Cimini, 2014).

The results of previous studies on the value relevance of various income totals, i.e. net income (profit or loss) or CI, are inconclusive. In some relative association studies, researchers find that NI has more explanatory power than CI, whereas others present opposite findings, i.e. proposing that CI has higher value relevance (e.g. Goncharov and Hodgson, 2011; Biddle and Choi, 2006; Kanagaretnam *et al.*, 2009). In addition, the results of prior studies on incremental value relevance of OCI are conflicting. Some findings will briefly be discussed below.

Early studies have largely focused on value relevance and the predictive ability of CI and OCI. For example, Dhaliwal *et al.* (1999), examining the relative usefulness of CI and net income (NI) among US investors, found that both NI and CI are value relevant. They also found that NI is a better performance indicator to predict stock returns, future NI, and future operating cash flows than CI with a total sample, comprising all industry sectors. Further, the results also indicate that CI does not explain returns better than NI for non-financial firms, but that CI for financial firms has incremental explanatory power for returns above and beyond NI. The authors suggest that this effect is likely driven by unrealised gains and losses on AFS securities, but could also be caused by the magnitude of OCI relative to NI for financial firms vs. non-financial firms. The findings thus show that the corporate business model is an important determinant of whether the investor ought to evaluate firm performance based on CI or OCI components. Dhaliwal *et al.* (1999) also examined the incremental value relevance of three items included in OCI: unrealised gains/losses on marketable securities, foreign currency (FC) translation adjustments, and the minimum pension liability in excess of unrecognised prior service costs⁵. Their finding indicates support of value relevance only for one component of OCI, i.e. the gains/losses on marketable securities, and only for the financial services industry. O'Hanlon and Pope (1999) studied some components of OCI (so called dirty surplus flows⁶), such as extraordinary items, goodwill write-offs, foreign currency translation adjustments arising on consolidation, and revaluations for UK firms under UK GAAP⁷ over the period 1972-1992. Their findings indicate that only extraordinary items are value relevant, and only when they measure returns over multiple years. In contrast, Barth *et al.* (1996) and Louis (2003) find consistently strong results for gains or losses on investment securities and the FC translation adjustment, respectively, when they restrict their samples to a single sector of the economy.

⁵ Prior to the adoption of SFAS 130, a firm had to report these items on the balance sheet as adjustments to equity.

⁶ As clarified by O'Hanlon and Pope (1999, pp. 459-60), "Accounting earnings are stated on a clean surplus ('comprehensive' or 'all-inclusive') basis if all changes in the accounting book value of shareholders' equity, other than dividends and new equity issues, are recognised in contemporaneous earnings. In contrast, dirty surplus accounting allows certain changes in shareholders' equity, termed here 'dirty surplus flows', to bypass reported earnings. With relatively minor exceptions, US GAAP requires that 'Net Income' should be reported on a clean surplus basis. In contrast, UK GAAP has permitted a much wider use of dirty surplus accounting practices and significant dirty surplus flows have been commonplace, particularly in respect to the revaluation of fixed assets and the write-off of purchased goodwill".

⁷ SSAP 6: *Extraordinary Items and Prior Year Adjustments* (ASC, 1974).

Mechelli and Cimini (2014) investigated the value relevance of NI and CI for the period 2006 to 2011 for a sample of European listed companies. They propose that OCI would be value-relevant, because it recognises additional economic events that affect firm value, besides those that are disclosed in NI. Their findings show that “NI is more value-relevant than CI, even though the total OCI of the period adds relevant information to those items already disclosed in other accounting items such as NI and Book Value” (Mechelli and Cimini, 2014, p. 59). The coefficient of CI is, however, lower than the one of NI, which was expected due to its transitory nature. The requirement to issue a statement of other comprehensive income (SOI) does not appear to have significantly affected the value relevance of either CI or the total OCI during the studied period. The authors thus conclude that location does not influence value relevance of these items. They also found significant differences in the incremental value relevance of the total OCI across European countries, and argue that those differences may be caused by the countries’ characteristics, such as the source of funds (credit/equity and insider/outsider) and the legal systems. In another recent study, Jones and Smith (2011) analyse the value relevance of the OCI and found it value relevant, but less than other income components (e.g. special items).

Finally, among studies on the value relevance of particular components of OCI, Dhaliwal *et al.* (1999) examined the value relevance of unrealised gains and losses on AFS securities. The researchers find the component to be value-relevant, when the sample is restricted to financial institutions. Studies by Chambers *et al.* (2007) and Kanagaretnam *et al.* (2009) also confirm these results. In contrast, Mitra and Hossain (2009) find no value relevance of unrealised gains and losses on AFS securities.

Goncharov and Hodgson (2011) analysed a sample of European companies before the mandatory adoption of IFRS. They found that OCI and CI are price-relevant, but not as price-relevant as net income. This is because “for the general investor, aggregated CI, incorporating unrealised components, may introduce noise through realisation uncertainty, and because they are temporary and volatile” (Goncharov and Hodgson, 2011, p. 56). They examined three components of OCI (revaluation reserve adjustments, foreign currency translation adjustments, and unrealised gains and losses on AFS securities), and found none to be price relevant after controlling for net income and book value. However, the evidence indicated that unrealised gains and losses on AFS securities were almost value-relevant (at 10 % level).

They also found that unrealised gains and losses on AFS securities were not value relevant for analysts' price target revisions. Further, their results indicated that OCI and CI were value relevant for changes in analysts' price targets, but not for changes in OCI and CI. Overall, the evidence indicates that comprehensive income and OCI are less predictable than net income.

According to Graham and Lin (2017), the information value of OCI relative to profit or loss (net income) is not well understood. While both OCI and profit or loss include similar components, such as gains (losses) that increase (decrease) shareholders' equity and indicate more (less) firm value, they are fundamentally different. For example, some unrealised gains and losses would be presented, at least temporarily, in shareholders' equity as OCI items, whereas realised gains and losses are presented on the income statement as components of profit or loss. To differentiate OCI items from items in profit or loss, Linsmeier (2016) suggests evaluating consistent unique characteristics such as: a) degree of persistence or sustainability of income, b) core vs. noncore activities, c) degree of management control, d) one-time (nonrecurring) remeasurements vs. recurring amount, e) degree of measurement uncertainty, f) time horizon until realisation, and g) operating vs. investing and financing.

Preparers of financial statements claim that the 'excess' volatility of CI confuses financial statement users. Khan and Bradbury (2016) examine the volatility and risk relevance of CI, relative to net income, for a sample of 92 New Zealand nonfinancial firms for the period 2003–2010. They show that CI is more volatile than net income, and the volatility of CI will increase the perception of risk. These results hold when asset revaluations are excluded from OCI. These findings have relevant policy implications: (1) asset revaluation is the major component of OCI, which may increase volatility in CI compared to net income. This would indicate that the volatility of CI may be caused by the voluntary act of revaluation; (2) the finding supports the arguments of financial statement preparers that CI is, on average, more volatile than net income. Moreover, there is no evidence on whether the market is confused or misled by the incremental volatility of items of OCI.

Several studies report that unrealised gains/losses has an insignificant effect on bank stock returns, while realised gains/losses has a negative effect. Ahmed and Takeda (1995) claim that the omission of changes in value of other net assets due to interest rate changes may reflect those findings. After controlling for effects of other net assets, the researchers found that both unrealised and realised gains and losses have significant positive effects on bank returns in normal periods, but that the realised gain/losses effect is significantly lower when capital and earnings are low. The results show how investors assess realised and unrealised gains and losses on investment securities, held by commercial banks. Further, the study provides insights into how investors consider managerial discretion over realised gains and losses, used occasionally for earnings and capital management.

Other studies find mixed results on valuation of gains and losses. More specifically, Barth *et al.* (1990) and Barth (1994) find that realised gains and losses, on average, have a negative effect on stock returns. On the other side, Warfield and Linsmeier (1992) document that the negative coefficient on realised gains and losses is logical, as tax-paying banks would report losses to reduce their tax liability. Further, they do not find evidence of the use of realised gains and losses to manage earnings.

Bhat and Ryan (2015) examine how banks' measures of market and credit risk enhance the returns-relevance of their estimated annual unrealised fair value gains and losses (FVGL) for financial instruments. To capture differences in market liquidity and complexity of fair valuation of financial instruments, they distinguish between unrealised gains and losses that (i) are recorded in net income; (ii) are recorded in OCI; (iii) can be determined using information disclosed in the notes to financial statements. Then, they distinguish between banks' market risk and credit risk and look at how banks engage in risk modelling activities to address those two sources of risks. They find that banks' market and credit risk models, but not disclosures on those modelling activities, enhances the returns-relevance of their FVGL. This holds more so for less liquid instruments for which FVGL can be calculated from disclosures in the notes rather than recorded in NI or OCI.

Research by Gonedes and Dopuch (1974) has shown that there may be various reasons for a market reaction to an accounting change, such as new information, an association with a change in the operating or financing activities of the firm, or the economic significance of the change itself. The above value relevance studies measure mainly the power of the change, but do not investigate in depth the reason for the change. Section 4 provides a brief review of other factors influencing assets allocation and market reaction among investors.

3.3. Research on OCI and recycling

The IASB requires certain elements be recorded in OCI in several IFRS Standards. Generally, OCI items include current year unrealised gains and losses arising from: (1) changes in the fair value of financial instruments classified as available-for-sale (as explained above, the available-for-sale category has been removed in IFRS 9); (2) foreign currency translation adjustments; (3) remeasurement of pension net defined benefit liability (asset); and (4) changes in the fair value of derivative instruments classified as cash flow hedges (Graham and Lin, 2017, p. 3). Further, the treatment of those items will vary in a later financial period, as they will either be recycled to profit or loss (such as foreign currency differences, revaluations, and cash flow hedges) or not recycled at all (e.g. actuarial gains and losses related to pension assets). (Brouwer *et al.*, 2014) In this section, we shall focus primarily on the reporting of financial instruments classified as AFS. It is also notable, that IFRS have excluded certain OCI (gain/loss) transactions from being recycled into profit or loss, while the US and the Japanese GAAP permit all OCI gains and losses to be deferred until realised and then the OCI items to be transferred to net income (e.g. Hodgson and Russell, 2014; Jones and Smith, 2011; Frendy and Semba, 2017).

Investments in financial assets are classified into trading securities and AFS securities based on the buyer's intent at the time of acquisition, rather than the actual amount of time the securities are held before being sold (FASB, 1998). Debt or equity securities purchased to generate profits on short-term price differences are classified as trading securities, whereas AFS securities are labelled long-term. In practice, however, securities properly classified as trading securities may still be held longer, before being sold, than AFS securities. Further, it is the action of holding the AFS securities rather than selling them that generates earnings on the investment (Rambo and Lousteau, 2003).

Recycling (reclassification adjustments) of OCI is defined as amounts reclassified to profit or loss in the current period that were recognised in OCI in the current or previous periods (International Accounting Standards Board, 2014). Thus, recycling occurs when OCI components are reclassified into income against equity when, in later financial periods or at a later date, certain criteria regarding realisation and uncertainty are met (van Cauwenberge and de Beelde, 2010).

Tarca *et al.* (2008) specify that recycling occurs when: (1) an asset is sold for which the related fair value changes have previously been recognised directly into equity; and (2) on sale of the asset, potential gains and losses are realised (released from risk), and a corresponding fair value gain (loss) is removed from equity and included in net income for the period, but returned to equity through the recording of net income of the financial period. Thus, via recycling, the item will be reclassified from one subtotal (OCI/equity) to another subtotal (profit or loss) (Rees and Shane, 2012). The effect of recycling on the aggregate number of CI is thus a zero-sum effect (Frendy and Semba, 2017).

Over time, there has been an ongoing discussion among academics and practitioners on the issue of recycling or not. Based on the discussions related to the Discussion Paper (IASB, DP 2013) “A Review of the Conceptual Framework for Financial Reporting”, Brouwer *et al.* (2014) purport that recycling or not is a complex issue, and not easily resolved. Bradbury (2016) notes that the issue of recycling deserves more research. He also claims that unpicking the effect of recycling may not be, however, easy for users of financial statements, nor for researchers. Next, we sum up the very limited empirical evidence from studies on potential information usefulness of recycling.

Tarca *et al.* (2008) report experimental evidence that all users, both sophisticated and unsophisticated, can more easily extract information from financial statements about such comprehensive income items that are not recycled. They argue that recycling will cause increased complexity, and therefore limit the users’ ability to extract information. One limitation of their study is, however, that inherent differences in complexity across transactions may drive the findings, as some transactions require recycling and some not.

Dong *et al.* (2014), investigating gains or losses on AFS securities held by US commercial banks, found that realised gains or losses, which are being recycled from accumulated OCI to profit or loss, provide incremental information to the market, i.e. are value-relevant. Thus, they argue that the recycling of AFS gains and losses from accumulated OCI into profit or loss contributes to better predictive ability of future bank performance. In addition, their findings indicate a difference between realised and unrealised gains or losses from the users’ point of view. Recycled gains or losses are valued in the same way as other earnings components with high persistence, whereas unrealised gains or losses recognised in OCI are valued like earnings components with low persistence.

A study by Badertscher *et al.* (2014) shows that the market incrementally values other-than-temporary impairments (OTTI) of AFS and held-to-maturity securities. The authors interpret their findings as indicating that OTTI is likely to inform investors about the precision of unrealised gains or losses and may even reveal portfolio losses not yet recognised as OTTI. Further, they conclude that reporting unrealised losses in profit or loss via an OTTI will change how the investors price losses.

Using a sample of bank holding companies, Bratten *et al.* (2016) investigate whether fair value adjustments included in OCI predict future bank performance. They find that fair value adjustments in OCI can predict earnings of banks one or two years ahead. While they do not find similar implications for all fair value related unrealised gains and losses included in OCI, they do find that net unrealised gains and losses on AFS securities are positively associated with future earnings. They also emphasise that reliable measurement of fair values enhances predictive value.

Frendy and Semba (2017) investigate listed Japanese firms using a sample of 5,385 firm-years from the fiscal years 2012-2014 to test whether OCI recycling improves information usefulness of profit or loss from six perspectives: relative and incremental value relevance, persistence, variability, operating cash flow and net income predictive power. The Accounting Standards Board of Japan (ASBJ) proposed a new set of endorsed International Financial Reporting Standards in 2015 to endorse existing IFRS and interpretations to better suit the needs of the Japanese accounting environment and its constituents. One of the significant changes relates to accounting for OCI, and denotes that profit or loss should be all-inclusive, implying that all items included in OCI subsequently should be recycled to profit or loss. The results of the study by Frendy and Semba (2017) challenge the ASBJ's claim that recycling improves the general information usefulness characteristics of net income. The study indicates that net income integrating recycling information shows higher relative value relevance compared to net income that excludes recycling, but these results only hold for financial firms, not for non-financial firms. Further, recycling disclosure by itself does not improve the incremental value relevance and the predictive power of operating cash flow and net income. The results also indicate that including recycling information into net income "reduces the persistence and increases variability of net income due to the transitory nature of the realised OCI earnings reclassification" (Frendy and Semba, 2017, p. 398).

In summary, scholars propose, based on their results of the positive effect of recycling, that investors of financial firms regard recycling disclosure value relevant and useful for improving their investment decision making process. Based on the above studies there seems to be some empirical evidence of information usefulness of recycling in the extant literature. Investors apparently take note of the type of gains or losses, i.e. the fact that gains or losses are realised or not (i.e. unrealised) appears to matter. This would support the current regulation, where realised and unrealised gains or losses are treated differently and recycling is required. Further, it seems as if recycling practice might affect investors' pricing on income classification changes (Frendy and Semba, 2017).

Scholars justify the positive effect of recycling on capital market by providing some theoretical and practical considerations (e.g. Black, 2016; Frendy and Semba, 2017). From a theoretical perspective, recycling enables the firm to provide information, consistently over its operating period, between accumulated net income and accumulated net cash flows (Accounting Standards Board of Japan, 2015a). By doing so, it is argued that recycling will increase the usefulness of income statement information as an overall indicator of performance (e.g. Accounting Standards Board of Japan, 2015b). From a practical standpoint, users of financial statements commonly base their decisions on earnings per share (EPS), and for those calculations net income is used. By recycling transactions, realised accumulated OCI transactions will subsequently be recognised in net income, thus affecting EPS.

There are, however, also criticism and concerns about recycling. Both scholars and accounting standard setters have raised concerns that OCI recycling may bring unnecessary complexity for financial statements preparers (e.g. Hodgson and Russell, 2014; Rees and Shane, 2012). Tarca *et al.* (2008) point out that also financial statement users' ability to extract information may be hindered by complexity. For example, AFS numbers are reported in many places.

Hodgson and Russell (2014) write that OCI recycling highlights issues related to the persistence of the OCI income. The degree of persistence will be determined by the time that OCI is held in equity and whether gains are infrequent or not. Jones and Smith (2011) find that if recycling occurs regularly, persistence for OCI items will be negative (i.e. those items partially reverse over time), and the predictability of OCI components for future economic variables becomes unclear (Hodgson and Russell, 2014). Further, scholars have mainly considered OCI gains and losses to be transitory, in part because they are unrealised. This may potentially limit the usefulness of these items for predicting future cash flows (Jones and Smith, 2011), income (Rees and Shane, 2012), and market values (Barker, 2004). Consequently, unrealised OCI gains and losses may not indicate wealth realisations, and related spending decisions will be unwarranted (Graham and Lin, 2017). On the other hand, Chambers *et al.* (2007) report a response coefficient greater than one for the association between OCI unrealised holding gains and losses from AFS securities and stock returns. The results seem somewhat inexplicable given that unrealised gains and losses are considered transitory, but the high value of the response coefficient could imply that market participants consider the wealth effect from OCI gains and losses to be of great importance (Graham and Lin, 2017).

The theoretical merit of OCI recycling has been challenged from the perspective of dirty surplus accounting that assumes that transaction gains or losses that bypass bottom-line earnings are excluded from net income (Kanagaretnam *et al.*, 2009). Such excluded transactions are recognised as OCI and regarded as transitory earnings. Ohlson (1995; 1999) advocates dirty surplus accounting and emphasises three advantages from excluding transitory earnings from net income. First, financial statement users will not receive useful information for decision making from transitory earnings. Second, from the financial statements analysis perspective transitory earnings are not relevant for forecasting and valuation purposes but via their impact on book value. Third, generally dirty surplus items are also excluded in calculations of net income or book value in valuation models, implying that transitory earnings are not considered informative for valuation. Early empirical research findings indicate the exclusion of “dirty surplus items” in the income statement reduces earnings volatility, improves predictive power, and minimizes noisy information from earnings information (Wang *et al.*, 2006). Thus, based on Ohlson (1999)’s dirty surplus accounting framework, recycling transactions may diminish the information usefulness of net income due to the dilution effect of recycled OCI transitory earnings.

Also Black (2016) discusses comprehensive income (CI). He claims that, although CI is not a measure of true ‘clean surplus’ earnings, CI may be regarded as more closely aligned with ‘clean surplus’ accounting than NI under IFRS. This is because CI includes more period-over-period changes in assets and liabilities (in OCI) than NI. He also opposes including the components of OCI in net income, because he argues that most of the OCI components by nature are either transitory or derived from noisy market price movements. The latter implies that they will not truly reflect fundamental changes in firms’ assets and liabilities.

Further, Brouwer *et al.* (2014) question whether recycling adds any real value to investor decision-making. After illustrating recycling with an example of foreign currency translation adjustment, they conclude (2014, p. 252): “Recycling the amount can only be based on the idea that it should at some time be included in profit or loss, but the sales transaction and resulting realisation in itself contains no information about the return an entity has made on its economic resources in this period. In our view, only when the distinction between profit or loss and OCI would be made based on the realised vs. unrealised attribute, could recycling be justified.”

However, as a counter-argument, Brouwer *et al.* (2014) also state that non-recycling raises problems. Rees and Shane (2012) argue that financial statements users may not accurately differentiate the pricing between unrealised and realised gains and losses, if recycling is eliminated or CI replaces net income as the primary performance measure. In addition, Detzen (2016) purports that recycling maintains income as the primary performance indicator and the elimination of recycling undermines the concept of income.

4. Review of research on effects of accounting requirements on investment strategies

In this section, we analyse studies that aim to explain how investments strategies are affected by accounting requirements. In order to infer conclusions on possible effects of IFRS 9, we review three main streams of literature:

- (1) studies that indicate how banks change their investment behaviour when regulatory capital⁸ might or might not be affected by new accounting standards;
- (2) studies on effects of changes in accounting standards on investment strategies;
- (3) studies on factors influencing long-term investors’ investment strategies.

⁸ For a definition of banking sector regulatory capital, see Deloitte (2016)

4.1 Effects of new accounting standards on banks' investment behaviour

In this section we review studies that document changes in investment behaviour of banks following the introduction of new accounting standards affecting or not their regulatory capital. These studies focus mainly on the USA.

Based on bank holding companies' response to the implementation of SFAS 115 – which required that investment securities be valued using market interest rates, and equity accounts to be adjusted to reflect changes in these market values – Beatty (1995) suggests that the main reason why bank managers and regulators opposed the adoption of the standard was that the increased volatility in reported equity, caused by this accounting standard, did not indicate true volatility. As a result, bank holding companies appeared to alter their investment portfolio management. The author also proposed and found that banks could continue to manage the numbers reported in the financial statements, indicated by a change in their investment portfolio management. In the quarter of adoption, there was a decrease in both the proportion of securities classified as AFS and their maturity. Thus, it appears that bank managers wanted to reduce the volatility in reported capital and maintain flexibility when reporting earnings through the recognition of gains on AFS sales.

Beatty's results were in contrast with two previous studies, which examined past changes in the market value of banks' investment portfolios. Those studies found that the effects of the SFAS 115 adoption would be small. In a study of 1970-1990, Barth *et al.* (1995) found an increase in volatility of reported equity, which included changes in investment securities values, but suggested that this increase in volatility is of low importance to investors or regulators. Also Carey (1995) claims that the effects were likely to be small, but did not say anything about whether regulatory discipline will be improved or worsened.

In contrast, E&Y (1993) reported that more than half of respondents to their survey expected to change their investment behaviour, if SFAS 115 was adopted. Approximately 95 percent of respondents said that they would shorten the maturity of debt securities held and about 40 percent claimed that they would increase their hedging activity. Moreover, they were likely to reduce the proportion of assets held in investment securities. In a follow-up survey, E&Y (1994) reported that 60 percent of the respondents claimed to have altered their investment strategies after the SFAS 115 adoption. Overall, the respondents argued that they had shortened the maturity and duration of their portfolio and reduced their holdings of mortgage-backed securities and mortgage derivatives. Only about 10 percent indicated that they might increase their hedging activity.

In another study on the adoption of SFAS 115, Hodder *et al.* (2002) investigated whether the SFAS 115, seen as an exogenous shock to regulatory risk, provided incentives for US banks to depart from portfolio and risk benchmarks due to standard adoption. Their findings show that accounting standards may affect banks' economic decisions. All banks incurred the costs related to the accounting changes under SFAS 115, but weakly capitalized banks were hit harder. Stronger banks would under-allocate securities to their AFS portfolio, because the decision to classify securities as held to maturity HTM impaired liquidity. Upon adoption of the new standard, the banks decreased the fair-value sensitivity (interest-rate risk) on their securities portfolio and increased the fair-value sensitivity on their loan portfolio. At the same time, they also decreased credit risk on securities.

For banks, AFS securities gains and losses are recognised in earnings, and largely in regulatory capital, only when they are realised. Barth *et al.* (2017) investigated if and how banks use realised gains and losses on AFS securities to manage their earnings and regulatory capital, and concluded that banks seem to use realised gains/losses on AFS securities to smooth earnings. They argue that banks with negative earnings avoid or reduce losses, or engage in 'big bath' earnings management, however constrained with regulatory capital. The extent to and the various ways in which banks may use realised gains/losses on AFS securities to manage earnings and regulatory capital depends largely on their circumstances, which also includes the extent to which they have unrealised gains and losses to realise. The authors suggest that an inclusion of unrealised gains/losses on AFS securities in regulatory capital and earnings might eliminate the banks' incentives. They point to the recent steps taken in the USA, where the largest, most sophisticated banks have to include unrealised gains/losses on AFS securities in regulatory capital. This paper shows that the inclusion of gains/losses on AFS securities in OCI does not eliminate the incentive for banks to use those for earnings management purposes. Rather, it suggests that recognising these gains and losses in earnings is necessary to remove the incentive of using realised gains/losses on AFS securities as an earnings management tool.

Another stream of research examines the impact of accounting standards (i.e. SFAS 115 and SFAS 157) on bank managers' behaviour. Some of these studies examine changes in both asset classification and composition at bank holding companies as a result of the adoption of an accounting standard that does not directly influence either earnings or regulatory capital.

Iselin and Nicoletti (2017) examine changes in public bank investment behaviour after SFAS 157, which did not have a direct effect on regulatory capital, but required disclosure of all assets and liabilities recognised at fair value according to a three-level hierarchy. They found that after the enactment of SFAS 157, public banks reduced their holding of mortgage-backed securities assets within the AFS category, and increased their holding of those assets in the HTM portfolio. Further, Chircop and Novotny-Farkas (2016) find evidence that US banks affected by the removal of the accumulated OCI filter reduced their investment in risky AFS securities relative to unaffected banks.

A very few studies focus on European banks. These are mainly related to the literature addressing how changes in prudential regulation may have affected bank performance, the drivers of bank credit risk and risk-taking behaviour at the international level.

In particular, Fiechter (2011) examines the effect of the option given by IAS 39 to entities to reclassify non-derivative financial assets held for trading and AFS financial assets. He found that one third of European banks took advantage of this reclassification opportunity. As a result, they avoided substantial fair value losses and thus reported better ratios such as ROA and ROE, higher book value of equity and higher regulatory capital. Therefore, this finding documents the impact of the amendments of IAS 39 introduced in 2008 on European banks' financial statements and makes fully apparent the motivations of financial institutions which pushed for these changes in accounting standards.

Argimón *et al.* (2017) analyse the impact of prudential filters on the amount of securities that European banks hold and on their regulatory capital from 2005 to 2013. They focus on the impact of the different prudential filters for unrealised fair value gains and losses on AFS assets with the aim to offer evidence on whether banks' behaviour is consistent with addressing regulatory risk and, in particular, with the search for more stable regulatory capital. They find evidence of the impact on capital volatility of introducing into its calculation unrealised gains and losses arising from AFS securities. However, they could not find robust evidence that the regulatory treatment of unrealised gains and losses from equity assets impacts either the weight of fair value assets, the distribution of equity between the AFS and HFT portfolio, or banks' capital ratios. The low weight accounted for by equity assets in banks' total assets might explain such a result.

4.2 Effects of changes in accounting standards on investment strategies

A few studies provide evidence of changes in investment strategies in response to previously introduced changes in accounting standards especially in relation to pensions. These studies are reviewed below.

Amir *et al.* (2010) examine how changes in accounting standards influencing OCI may also affect real management decisions due to managers' risk preferences. They examined how changes in pension accounting standards in the UK and the USA affected the equity/debt security mix in pension portfolios. IFRS 17 and IAS 19 in the UK and SFAS 158 in the USA require firms to recognise the net pension asset/liability on the balance sheet, in addition to actuarial gains and losses in OCI. The authors predicted that the new standards would introduce more volatility in OCI, but that an increase in the proportion of pension assets invested in debt securities would reduce this volatility. They find that managers may shift from equity to debt securities in their pension portfolios in the periods surrounding the adoption, but it remains unclear whether that shift from equity to debt securities reduced the volatility of OCI.

Generally, it has been argued that new disclosure requirements provide less powerful incentives for firms to change their decisions or behaviour in response to changes in accounting standards than recognition requirements. A study by Chuck (2013) demonstrates that even a change in disclosure requirements related to defined benefit pensions in the USA (as opposed to changes in accounting standards mandating recognition) can significantly alter a firm's behaviour. Chuck examines whether firms take actions to more closely align the expected rate of return (ERR) with asset allocation in response to the mandated disclosure on asset composition. Findings suggest that, even though SFAS 132 (revised) apparently achieved one of its objectives, there were also interesting economic consequences. Firms reacted to the new SFAS 132 (revised) by increasing their asset allocation to equities and/or by reducing ERRs. At firm level, a shift in pension assets toward equities can imply a risk mismatch between pension assets and pension liabilities. This is because pension assets invested in equities differ in durations and risk characteristics to those of pension liabilities. In times of large stock market losses, pension plans can become severely underfunded, and therefore firms that report a lower pension expense through increasing their equity allocation may expose their shareholders to large risks.

Similarly, Barthelme *et al.* (2017) examine IAS 19 (revised) in order to understand its ‘real’ effects on defined benefit pension plans. IAS 19 (revised) increases expected pension-induced equity volatility by eliminating the ‘corridor method’, a smoothing device for actuarial gains and losses. Using the results of semi-structured interviews with chief accounting officers and analysis of comment letters, they prove that IAS 19 (revised) makes firms reconsider their pension investment decisions, by shifting their pension assets from equities to bonds. This effect is less evident for firms with larger and better funded pension plans. Supplementary analyses of firms’ annual reports and of information from rating agencies suggest that this shift in pension investment is mainly due to IAS 19 (revised)’s changes in the accounting for actuarial gains and losses (the ‘OCI method’). This study is important because it shows how concerns about pension-induced equity volatility lead to potential shifts in firms’ real economic activities.

The above findings are consistent with the notion that firms adjust their ‘real’ activities, including their investment behaviour, to mitigate the undesired impact of recognition rules on the volatility of equity book values and other key financial statement items. The results suggest that managers’ concerns about equity volatility complement widely documented concerns over earnings effects in influencing manager behaviour. These results also inform standard setters’ considerations regarding the future role of OCI. Moreover, they show potential unintended consequences of IFRS 9. Drawing from the consequences of the introduction of new or revised accounting standards both in the EU and in the USA, we found evidence that these can affect the allocation of assets and thereby their riskiness. Future empirical research should explore the consequences of these behavioural shifts for a wide range of stakeholders.

4.3 Research on factors influencing long-term investment strategies

Besides accounting regulation and related regulatory changes, many other financial, social or organisational factors influence the investment strategies of long-term equity investors. In addition, factors influencing changes in allocation of capital between equities and other asset classes are important to bring forth as well as factors triggering trading decisions. This section aims to summarise some prior studies in this area.

One primary factor influencing investors is past, expected and/or realised returns on different asset classes. First, past investment returns are important drivers of investment policy. Second, if the realised return on the investment does not meet with the investor's expectations, this may cause changes in actual portfolio weights. Usually such a change in the weight of equity is rather passive by nature, indicating that no trading takes place. Investors may, however, rebalance their portfolios to counteract the impact of negative return on their portfolios (Bams *et al.*, 2016).

Fair valuation is also used in risk-based funding and solvency regulations, for example applied in particular countries to pension funds as well as envisaged in the Solvency II framework for European insurers. One of the aspects here is that such regulations apply a different capital charge to different investments depending on their perceived riskiness and use of risk-free discount rates (Severinson and Yermo, 2012). Thus, this capital charge on various investments may also be a factor that investors consider in asset allocation.

Many empirical studies have examined the effect of taxation on corporate shares, on asset prices and on portfolio realisation. Corporate and individual taxes may significantly influence the investment and divestment decisions. There is also evidence that share prices are influenced by changes in the taxation of capital gains. Further, capital gains taxation, often effective upon selling an investment, has been found to delay exit decisions, but may lose decision relevance for very long equity holdings (Hegemann *et al.*, 2017). Collins *et al.* (1997) examine the effects of taxes, regulation, earnings, and organisational form on life insurers' investment portfolio realisations. By using a unique equity tax levied on mutual life insurers and the variation in the statutory rate during the sample period, they are able to disentangle the effects of taxes from earnings or profitability. Consistent with some policymakers' claims, they find that the variation in firm-specific equity tax rate affects mutual insurers' capital gain realisations. Moreover, they find that capital regulation and earnings considerations affect both stocks' and mutuals' realisations.

Understanding the effect of taxes on investors' trading decisions is of interest to researchers and policy makers. Despite general agreement that taxes should affect investors' portfolio decisions, the empirical evidence is mixed. Some studies examine tax-motivated year-end trading and the trading effects of tax law changes. Seida and Wempe (2000) find that individual investors' reactions in both the short- and long-term trading are in line with a trading model that incorporates taxes. Further, Slemrod (1982), Henderson (1990) and Ricketts and Walter (1997) give evidence of increased trading activity after capital gain tax rate reductions.

5. Conclusions, recommendations and suggestions for further research

The aim of this literature review was to identify, consider and evaluate previous research in order to understand possible impact of accounting requirements on long-term investors' investment strategies. In particular, we examined academic research relevant in understanding long-term investors' use of information for making investment decisions and their possible reactions to the forthcoming changes in accounting policies of IFRS 9 related to the removal of recycling for AFS financial assets measured at fair value through OCI. We shall briefly summarize our main findings and conclusions below related to the posed research questions in the introductory section. Further, we state some limitations of our review and suggestions for further research as well as some policy implications.

How does presentation format of the financial information influence investors' behaviour?

Drawing on the efficient market hypothesis (EMH), one would assume that the presentation format of financial information would not affect investors' decision-making in such cases when the information already exists in another form in the financial statements. However, alternative theories, for example Hirshleifer and Theo's (2003) limited attention theory to available financial data, explain that investors better can process information that is less costly to extract from the financial statements and more persistently presented. In compliance with IFRS, preparers of financial statements can choose to present comprehensive income (CI) either in a single statement of performance or in two separate but subsequent statements. Although there appears to be minor differences between the two approaches, the results of previous research on the effects of presentation format on investors' behaviour are inconclusive. Generally, there is an understanding that investors and other users of financial statement information can more easily, quickly and completely review and absorb information presented in profit or loss, because this location is more familiar to them.

How value relevant are OCI and AFS related gains and losses?

The somewhat inconclusive evidence of prior studies on value relevance of OCI is summed up below. The EMH predicts that the reporting location has no effect on the value relevance of financial information. Thus, if the regulatory change only affects the reporting location of OCI and not its content, there would be no expected change in value relevance. Further, if the regulatory change implies a more transparent approach, the change in reporting location should enhance the value relevance of OCI. Furthermore, the limited attention theory predicts that the value relevance of an item decreases with information processing costs. Therefore, if the reporting location of OCI is changed, investors will face additional, at least temporary costs

to locate and process the reported OCI information. In addition, OCI is not value relevant, given that the underlying components are transitory in nature. This view is supported by several studies using samples of US firms. The authors find that profit or loss outperforms OCI in predicting future cash flows and has a greater association with market value (e.g. Dhaliwal *et al.* 1999; Barton *et al.*, 2010). Finally, some scholars (Jones and Smith, 2011; Mechelli and Cimini, 2014) find evidence that OCI items are incrementally value-relevant, despite their transitory nature. Previous empirical findings are also inconclusive regarding the value relevance of the components of OCI. For example Kanagaretnam *et al.* (2009) report that AFS securities are significantly associated with price and market returns for a sample of Canadian firms, whereas Mitra and Hossain (2009) find no value relevance. Further, scholars argue that investors can change their mindset and learn to act differently, indicating that users would interpret unrealised gains or losses on AFS securities similarly to realised gains or losses (Rees and Shane, 2012).

What are the pros and cons of recycling?

Academics, regulators and practitioners bring forth various opinions on the effects of recycling, but there is rather limited empirical evidence about the benefits and costs of recycling. There is some evidence that the recycling of AFS gains and losses from accumulated OCI into profit or loss may help investors in predicting future bank performance. Further, evidence suggests that net unrealised gains and losses on AFS securities are positively associated with future earnings. Thus, results seem to indicate that investors may regard recycling value relevant and useful for improving their decision making process.

From a cost perspective, some studies point out that recycling may bring unnecessary complexity to financial statements preparers. Further, as OCI gains and losses are considered transitory because being in part unrealised, they may not be useful for predicting future cash flows. Thus, scholars question whether recycling indeed adds any real value to investors' decision-making. Others argue that investors may not accurately differentiate the pricing between unrealised and realised gains and losses, if no recycling is done.

How are investment strategies affected by accounting requirements?

Studies analysed indicate how banks change their investment behaviour when regulatory capital is affected by new accounting standards. These studies have mainly focused on the US market and examine banks' response to the adoption of SFAS 115 and SFAS 157, respectively. They show that banks classify fewer securities as AFS if unrealised gain and losses on these securities directly affect regulatory capital. Empirical evidence has also been gathered on banks' reaction to the option of abandoning fair value recognition for selected financial assets that was granted by the amended IAS 39 in 2008. Fiechter (2011) finds that European banks used this reclassification option to improve their key financial indicators.

A few studies provide evidence of changes in investment strategies in response to previously introduced changes in accounting standards, especially to accounting standards related to pensions. These studies are consistent with the notion that firms adjust their 'real' activities, including their investment behaviour, to mitigate the undesired impact of recognition rules on the volatility of equity book values and other key financial statement items. The results suggest that managers' concerns about equity volatility complement widely documented concerns over earnings effects in influencing manager behaviour. These results also inform standard setters' considerations regarding the future role of OCI.

What factors influence long-term investors' investment strategies?

Besides accounting regulation and related regulatory changes, many other financial, social or organisational factors influence the investment strategies of long-term equity investors. In addition, factors influencing changes in allocation of capital between equities and other asset classes are important to bring forth as well as factors triggering trading decisions.

Many empirical studies have examined the effect of taxation on corporate shares, on asset prices and on portfolio realisation. Corporate and individual taxes may significantly influence the investment and divestment decisions. There is also evidence that stock prices are influenced by changes in the tax rate of capital gains. Further, capital gains taxation, often effective upon selling an investment, has been found to delay exit decisions, but may lose decision relevance for very long equity holdings (Hegemann *et al.*, 2017).

Key Points:

- *Generally, investors find information presented in profit or loss to be easier to absorb and review*
- *Inconclusive empirical evidence on the value relevance of OCI and its components*
- *Empirical evidence on recycling is scarce*
- *Recycling is complicated, both for preparers and for users of financial statements*
- *Recycled gains and losses are considered value relevant, i.e. provide incremental information to the market, and thus provide better predictive ability of corporate performance*
- *Firms may use recycling to manage their earnings*
- *Long-term investors may change their investment strategies in response to changes in accounting requirements*
- *Besides accounting regulation, factors such as market uncertainty, expected and/or realised returns on asset classes, taxation, and corporate disclosure may influence investment strategies*

Limitations and Contribution

Like any other study, this study has some limitations. Despite our efforts to find and review IFRS studies, the majority of studies analysed is based on US data. The reason for the lack of relevant IFRS studies may be related to the overall short time of mandatory use of IFRS. Further, the change in IFRS 9 became effective from 2018 (and will become effective for insurance companies only in 2021), providing no extant empirical studies on the topic of interest.

Despite these shortcomings, we believe that our study can contribute to the ongoing debate about presentation of corporate performance as well as provide a good starting-point for future empirical studies. We also propose that the review might be useful for standard setters in their future work. We provide a few suggestions for future research below.

Suggestions for Further Research

Understanding how changes in accounting regulation influence long-term investors' behaviour regarding equity investments is an important issue, given the impact it may have on the economic system. Our review highlights the need for more research to increase our understanding of and to address how investors price, evaluate and respond to accounting information, especially OCI and its components as well as the issue of recycling. Studies on the usefulness and relevance of accounting numbers of OCI, for example using cross-country samples, or by focusing on certain investor or industry sectors would be needed. Further, how long-term investors consider recycling on AFS equities in their economic decision-making as well as research focusing on the corporate business model as a determinant of investors' decision-making may be well worth an effort.

Policy Implications

The main conclusion of this review is that the information provided by financial statements should be useful for long-term investment decisions. Below we provide some suggestions that may assist standard setters.

First, we argue that standard setters should consider the general requirement that financial information should be useful for decision-making. Evidence indicates that recycling may be seen as a complex issue and that investors and other users of financial information might not clearly understand the issue. Thus, weighing the benefits of recycling against the costs appears to be an important matter to consider.

Second, although long-term investors are important users of financial information, they are not the only user group. Developing standards that consider multiple stakeholders' needs as well as provide reliable and verifiable information is thus of utmost importance.

Third, from a theoretical perspective, it seems still somewhat unclear how to distinguish between profit or loss and OCI. Under such circumstances, providing alternative solutions or removing options may not provide the desired effect. Therefore, it is extremely important that new standards are developed through a genuine debate with various professionals in the field as well as other standard-setters.

Finally, we would like to emphasise the importance of accounting regulation for the financial markets and the economy overall. Thus, it is of utmost importance that the users of financial statements understand the effects of accounting regulation and consider them in their investment decision making.

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