Review on Tax Research in Accounting: Is the information given by U.S. GAAP income taxes also provided by IFRS?

Lisa Frey / Lisa Engelhard

Diskussionsbeitrag Nr. B-28-17

Betriebswirtschaftliche Reihe ISSN 1435-3539

PASSAUER
DISKUSSIONSPAPIERE

Herausgeber:
Die Gruppe der betriebswirtschaftlichen Professoren
der Wirtschaftswissenschaftlichen Fakultät
der Universität Passau
94030 Passau

Review on Tax Research in Accounting: Is the information given by U.S. GAAP income taxes also provided by IFRS?

Lisa Frey / Lisa Engelhard

Diskussionsbeitrag Nr. B-28-17

Betriebswirtschaftliche Reihe ISSN 1435-3539

Corresponding author:
Lisa Frey
Lehrstuhl für Betriebswirtschaftslehre mit
Schwerpunkt Accounting und Auditing
Wirtschaftswissenschaftliche Fakultät der
Universität Passau
94032 Passau
lisafrey@t-online.de

Lisa Engelhard
BSH Hausgeräte GmbH
Carl-Wery-Str. 34
81739 München
lisa.engelhard@bshg.com

Für den Inhalt der Passauer Diskussionspapiere ist der jeweilige Autor verantwortlich.
Es wird gebeten, sich mit Anregungen und Kritik direkt an den Autor zu wenden

Review on Tax Research in Accounting: Is the information given by U.S. GAAP income taxes also provided by IFRS?

Lisa Frey / Lisa Engelhard

Abstract:

In this paper, we present a review of tax research in accounting. We outline U.S. GAAP accounting rules for the following four income tax notes and survey the area of research literature dealing with the information content provided by U.S. GAAP: (1) unrecognized tax benefits, (2) valuation allowances, (3) foreign earnings designated as permanently reinvested, and (4) book-tax differences. Building on this, we present the accounting rules for comparable income tax notes following IFRS standards and offer which we believe are interesting avenues for future research on the information on tax notes provided by IFRS financial statements.

Keywords: UTB, valuation allowance, permanently reinvested earnings, book-tax difference, U.S. GAAP, IFRS, tax notes

JEL: M400, M410, M480, H200

1. Introduction

This paper reviews prior research on the information content of U.S. GAAP specific accounting positions for income taxes, highlights differences between U.S. GAAP and IFRS accounting rules on information provided on taxes, and outlines avenues for further research on accounting in international IFRS settings. Both the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) agreed to consider income tax accounting within their convergence efforts (IASB, 2009). However, the comparison of U.S. GAAP and IFRS in the SEC's Work Plan for the Consideration of Incorporating International Financial Reporting Standards into the Financial Reporting System for U.S. Issuers points out that there are still differences between those two accounting standards in regard to income taxes.

So far, research on taxes in the area of accounting is primarily dominated by U.S. studies focusing on U.S. firms which report their financial accounts according to U.S. GAAP. This may largely be due to U.S. based multinationals putting major efforts into aggressively avoiding taxes and shifting tax income. Consequently, even institutions such as the Organisation for Economic Co-operation and Development (OECD, 2013) have been incited to pay particular attention to tax issues. However, research on tax accounts of multinational firms which base their financial accounts on IFRS accounting rules and whose headquarters are domiciled outside the U.S. is scarce, although accounting for income taxes 'has become the most active area of accounting research in taxation' (Graham, Raedy, & Shackelford, 2012, p. 412). Now that IFRS accounting standards have started turning into global accounting standards—with more than 100 countries already requiring IFRS financial statements for most or all domestic listed enterprises (Pacter, 2014)—tax research in accounting should focus much more on IFRS settings. Hence this study suggests this as an avenue for further research.

In order to focus the paper and keep it to a manageable length, we only focus on tax-related positions which are U.S. GAAP specific, have been broadly examined in prior research, and where IFRS accounting standards are missing comparable positions at first glance. These include the following four tax notes: first, uncertain tax benefits (UTBs); second, valuation allowances (VAs); third, foreign earnings designated as permanently reinvested (PRE); and finally, book-tax differences (BTDs) which can be separated into temporary and permanent differences and are provided by the reconciliation of expected and actual tax rates. The first three of those tax-related accounting disclosures can be subsumed under the concept of discretionary tax accruals (Chi, Pincus, & Teoh,

2014; Lev & Nissim, 2004). Book-tax differences have as their temporary and permanent components pretax discretionary accruals and non-deductible pretax accruals. This literature review addresses all three tax-related accrual components because of their special effect on accounting net income (Lev & Nissim, 2004). In that regard, we only review studies on these tax-related positions that find evidence of the information content provided under U.S. GAAP. Where studies have also been conducted in regard to IFRS, we acknowledge them. We deliberately refrain from considering research that regards settings when firms are following national GAAP accounting standards—this is especially the case when we are talking about book-tax differences—since these studies do not contribute to an understanding of tax notes provided under U.S. GAAP or IFRS.

This study shows that there are more similarities between IFRS and U.S. GAAP tax notes than expected at first glance. However, the devil lies in the details. Nevertheless, we believe on the basis of our discussion that with some effort financial statement readers and researchers are able to overcome heterogeneous accounting practices and reconcile income tax notes provided under IFRS to tax notes that would have been disclosed if U.S. GAAP were applied. Research on such reconciliations may benefit and contribute to an understanding of IFRS financial statements' underlying information content in comparison to U.S. GAAP notes on income taxes. Further, such reconciliations allow to test whether the implications and interpretations of those 'reconciled income tax notes' still hold in surroundings where IFRS and other tax laws than U.S. tax law apply. And finally, such research helps to investigate whether the implications and interpretations revealed for U.S. GAAP tax notes and those 'reconciled income tax notes' can be transferred to IFRS notes on income taxes.

Our study contributes to the literature in three ways. First, it adds to an understanding of differences between U.S. GAAP and IFRS accounting rules on income taxes. We contribute to the ongoing discussion in the U.S. on adopting IFRS for domestic firms. In accordance with the seven scenarios identified by Hail, Leuz, and Wysocki (2010) for developing financial reporting standards for the U.S. with respect to IFRS, this analysis contributes to the awareness of the consequences of IFRS adoption for income taxes and tax research in accounting. However, the impact of the differences identified in this study between income tax accounting under U.S. GAAP and under IFRS will primarily depend on the scenarios for future U.S. accounting standards.

Second, this study provides a comprehensive review of current tax research in accounting on uncertain tax benefits, valuation allowances, permanently reinvested foreign earnings, and book-tax differences. In addition to the tabulated overview in the appendix which briefly summaries the

studies' research questions, underlying samples, and findings, we place and structure the papers' evidence in topical contexts. In contrast to Graham et al. (2012), we review empirical and analytical studies which either investigate accounting for income taxes itself, its impact or other phenomena related to tax notes. Moreover, Hanlon and Heitzman (2010) and Shackelford and Shevlin (2001) focus by contrast more on major research areas and questions that are tried to be answered by accounting for income tax positions instead of being exclusively interested in tax notes and their accounting *per se* as we are. But foremost, this study differs from prior literature reviews on tax research in accounting by exclusively discussing respective IFRS accounting rules.

Finally, we show promising avenues for further research in international cross-country settings following IFRS standards. We reveal a great lack of research dealing with tax-related positions which have similar characteristics as those positions consistent with U.S. GAAP but are provided by IFRS financial reporting standards. Since not only accounting standards but also tax laws vary in international research settings, we need further evidence on the information content of those tax-related positions to support investors, policy makers, and authorities in understanding earnings management, tax avoidance, and firm performance. These findings will also help U.S. policymakers to assess the consequences of IFRS adoption for financial statements' underlying information content provided by tax-related accounting positions.

The paper proceeds as follows. Each tax-related accounting disclosure mentioned represents a certain area of tax research, which is individually addressed in the following order: (1) unrecognized tax benefits, (2) valuation allowances, (3) foreign earnings designated as permanently reinvested, and (4) book-tax differences. Each section begins by describing U.S. GAAP accounting rules, then outlines evidence found in prior U.S. studies, and finally portrays comparable IFRS accounting rules, highlights differences to U.S. GAAP, and formulates avenues for further research. The final section concludes.

2. Unrecognized Tax Benefits

2.1. U.S. GAAP accounting rules

For assessing tax positions, ASC 740 generally follows a two-step approach. First it must be evaluated whether it is *more likely than not* that the recognized tax position will sustain an exami-

nation. If this first step can be satisfied, in a second step the tax position is measured as the cumulated amount of tax benefits that is *more likely than not* to be sustained upon examination by the tax authorities. In this context the entity has to take all available information into consideration and needs to assume that the tax position will be investigated by the tax authority and that said tax authority has full knowledge of all available information concerning this position (ASC 740-10-25-6; ASC 740-10-25-7). The chance of not being detected may not be taken into account. In case new information obtained in subsequent years forces the entity to change its measurement of the tax positions, any value adjustment is prohibited (ASC 740-10-40-2). Tax positions which initially fail to meet the criteria for recognition can be qualified when they start to meet the requirements (ASC 740-10-25-12). However, this two-step process involves high managerial discretion (Hanlon & Heitzman, 2010). Unrecognized tax benefits (UTBs)[1] represent the difference between the maximum benefit recognized as a financial position in the financial statement assessed in the first step and the amount that is taken or expected to be taken by tax authorities for tax purposes evaluated in the second step (ASC 740-10-25-16). Consequently, UTBs are similar to liabilities towards tax authorities for cases where the relevant tax position cannot hold up to an investigation by tax authorities and, therefore, the expected tax benefit cannot be recognized. Tax notes concerning UTBs require consistent with ASC 740-10-50-15 and ASC 740-10-50-15A the disclosure of a tabular reconciliation showing increases and decreases in UTBs broken down by prior and current years and settlements with taxing authorities, the total amount of UTBs that would affect the effective tax rate if tax benefits were recognized, the total amount of interest and penalties related to UTBs, further details on positions and their underlying UTBs which may undergo significant increases and decreases within 12 months of the reporting date, and a description of tax years yet to be investigated by tax jurisdictions.

Because tax payables of corporations are self-assessed in the U.S. and tax statements are not examined regularly by tax authorities (Striegel, 2013), enterprises and their tax experts need to assess on their own which tax expenses on the basis of their earnings before taxes will pass a potential examination by the Internal Revenue Service (IRS). This highlights the specific importance of UTBs for U.S. firms in comparison to their international counterparts and shows that

[1] The terms 'unrecognized tax benefits', 'uncertain tax benefits', 'uncertain tax positions', 'tax cushions' and 'tax contingency reserves' all refer to ASC 740-10-25, SFAS No. 5, and FASB Interpretation Number (FIN) 48 and can be used interchangeably. However, the term 'uncertain tax position' is preferentially used with reference to IFRS which differs in its meaning to some extent as outlined in section 2.3.

UTBs stand both for the taxpayers' uncertainty and aggressiveness in the assessment of taxes. On the other, abnormally high UTBs may attract the attention of the IRS to the company's tax statement to be audited, reducing the chance of benefits being received on those uncertain tax positions which are not audited or lapsed.

2.2. Evidence in prior literature[2]

As pointed out in the previous section, UTBs can be seen as a measure for tax avoidance. Additionally, UTBs can be driven by financial reporting incentives such as earnings management or conservatism since the assessment of UTBs is subject to manager discretion. These two aspects of UTBs have been addressed in several studies, which are outlined in the following alongside studies on investor responses to UTBs.

The stream of research dealing with the connection of financial reporting incentives and UTBs is quite recent. Cazier, Rego, Tian, and Wilson (2015) examine whether firms use discretion in UTBs to meet or beat analyst forecasts of quarterly earnings. Their results show that firms with earnings below analyst forecasts before changes in tax reserves reduce UTBs in order to report higher earnings. UTBs are in turn more likely to increase if income before changes in UTBs significantly overshoots the consensus forecasts. By contrast, Gupta, Laux, and Lynch (2015) confirm these results just before FIN 48 became effective and reveal that UTBs are not managed to meet analyst forecasts in the *post*-FIN 48 period. De Simone, Robinson, and Stomberg (2014) illustrate considerable variation in reporting practices of uncertain tax positions by U.S. firms, which is indicative of high manager discretion. In this context, the study shows that companies with weaker corporate governance report lower UTBs for similar transactions. Nesbitt (2014) identifies the discretionary part of UTBs and finds that it captures financial reporting incentives, i.e., earnings management, instead of tax aggressiveness. He derives this finding from the association of discretionary UTBs with future tax expense instead of future taxes paid. Likewise, he shows that discretionary UTBs are greater for firms with internal control weaknesses, consistent with De Simone et al. (2014), and that they are used to meet analysts' consensus forecasts, consistent with Cazier et al. (2015). Greenwald, Jimenez-Angueira, Nwaeze, and Park (2015) also decompose tax reserves into predicted and unpredicted UTBs. Consistent with theoretical considerations by Blouin

[2] Since FIN 48 became effective for fiscal years beginning after December 15, 2006, this literature review only regards studies with evidence observed under the current legal status introduced since then.

and Robinson (2014) and Hanlon and Heitzman (2010), they argue that predicted UTBs represent conservative financial reporting, whereas unpredicted UTBs stand for a higher level of tax aggressiveness. Their analyses show that predicted UTBs are positively valued by investors as an indicator for financial reporting conservatism, but that investors adjust their perception downwards for unpredicted UTBs, i.e., a higher level of tax aggressiveness.

Although UTBs seem to be subject to earnings management by managers' discretion, subsequent evidence finds that investors positively value UTBs in stock prices, indicating that corresponding tax positions will not be disallowed. However, Koester, Lim, and Vigeland (2015) show that the positive relationship is reduced if firms have tax-related material weakness in internal controls. If tax-related internal controls are weak, tax footnote information is assumed to be less precise and to be associated with greater information risks. Drake, Lusch, and Stekelberg (2015) indicate that UTBs are positively valued by investors in firm value and reveal that UTBs represent tax avoidance instead of tax risk and own incremental information content to effective tax rates. Likewise, Song and Tucker (2008) find a positive association between tax reserves and firm value of U.S. firms complying with FIN 48 rules for the first time. By contrast, Ciconte, Donohoe, Lisowsky, and Mayberry (2014) reveal that UTBs are directly related to future cash tax outflows, suggesting that benefits of uncertain tax positions are resolved within five years and that UTBs are indeed not subject to managerial discretion. Robinson and Schmidt (2013) examine the association between disclosure quality of uncertain tax positions and proprietary costs, i.e., the firm's engagement in tax avoidance. They show a negative association between proprietary costs and disclosure quality and reveal that lower disclosure quality is rewarded by investors as this could cut down on tax payments. However, Frischmann, Shevlin, and Wilson (2008) fail to find a significant market reaction to more detailed information on UTBs upon the adoption of FIN 48. Robinson, Stomberg, and Towery (2015) reveal that FIN 48 tax reserves are overstated and only 24 cents per dollar are paid in cash by a settlement with the tax authorities over a three-year period. Moreover, they show that investors do not adjust the firm's market value of equity in response to more detailed information on UTBs, which indicates that FIN 48 regulation changes may be overestimated.

With respect to tax avoidance, there is consensus that UTBs are indicative for tax avoidance efforts. Lisowsky, Robinson, and Schmidt (2013) show that UTBs are positively associated with corporate tax sheltering and that UTBs are the only proxy of all tax avoidance measures (e.g., book-tax differences, tax rates, and (discretionary) permanent book-tax differences) that really capture tax shelters identified by the IRS's Office of Tax Shelter Analysis. Waegenaere, Sansing, and

Wielhouwer (2015) reveal in an analytical model that UTBs are able to identify tax aggressiveness depending on tax authorities' enforcement strength and companies' compliance with FIN 48. Additionally, they illustrate that both conservative and aggressive firms' tax avoidance strategies are best implemented by managers if their compensation contracts include penalties for increased UTBs. Gupta, Mills, and Towery (2014) demonstrate that companies' level of income tax uncertainty represented by UTBs is related to state income tax avoidance, meaning that state corporate income taxes, too, are perceived as a source of uncertainty by companies.

All these studies show that interpretations and results concerning the information content of UTBs is to some extent ambiguous. However, UTBs have been identified as a noteworthy source of information by investors, and—depending on the research question—capture aspects of both financial reporting incentives and tax avoidance. Due to the importance and diversity of UTBs, further research is expected to be conducted that may reveal other aspects of uncertainty of tax positions.

2.3. IFRS accounting rules and avenues for further research

In other countries than the U.S., taxpayers receive generally a tax assessment notice for each taxable year on a yearly basis. Therefore, these taxpayers only recognize a tax provision for the amount expected to be measured by the tax authority by the date of the tax assessment. This tax assessment can still be subject to review, but results initially in a tax liability. However, uncertainty of tax positions will arise if enterprises assume they will be audited by tax authorities or if court cases are pending. Consequently, these uncertainties for international firms may generally be to some extent comparable to uncertainties captured by UTBs (Meyer, Loitz, Linder, & Zerwas, 2010).

For a long time, IAS 12 and IAS 37 provided no precise guidance for the application of uncertain tax positions. The Exposure Draft ED/2009/2 and Draft IFRIC Interpretation DI/2015/1 have been published as guidance for recognizing and assessing uncertain tax positions.

Similar to the two-step approach of ASC 740, the Interpretation Committee decided that both current and deferred tax assets and liabilities should only be recognized if their realization is probable (IFRIC, 2015, no. BC18). Therefore, the entity should presume that it will be subject to examination by the tax authority, which has full knowledge of all available information. Unlike the U.S. GAAP *more likely than not* approach, the Interpretation Committee decided consciously to

further rely on the *expected value* and *most likely amount* measurements as they are already commonly used in IFRS (IFRIC, 2015, no. BC22). Of these two, this method should be used that best predicts the tax authorities' assessment. This decision to rely on the *expected value* and *most likely amount* approach instead of the U.S. GAAP *more likely than not* approach was taken to avoid complexity and contradiction to the best estimate approach of Section 46 of IAS 12 in cases where U.S. GAAP measurement was allowed as a third method. The example in Table 1 demonstrates the differences between these three measurement methods of uncertain tax positions under IFRS and U.S. GAAP. Whereas IFRS allows values of 700 (most likely amount) or 542.50 (expected value) for the uncertain tax position in our example, UTBs under U.S. GAAP take a value of 500 (more likely than not). The example shows that the valuation of uncertain tax positions differs significantly. Consequently, it may be assumed that evidence revealed by prior U.S. studies related to the information content of UTBs cannot easily be transferred to IFRS settings and that more research has to be conducted on the economic meaning of uncertain tax positions.

--- insert Table 1 here ---

In contrast to ASC 740, Section BC25 of the Draft Interpretation concludes that changes in facts and circumstances concerning uncertain tax positions have to be considered for recognition and reassessment. Disclosure requirements are less strict and less detailed than under U.S. GAAP. Following the Draft Interpretation, enterprises should only disclose whether each uncertain tax treatment is measured separately or together as a group, whether it is probable that the tax authority will accept the tax treatment, which measuring method is used, and which assumptions and estimates have been made. These less detailed descriptions in the tax notes concerning the source and reversal of uncertain tax positions may hinder the transfer of U.S. GAAP research designs to IFRS settings. However, the research questions raised by prior U.S. studies are relevant even in IFRS settings.

Before the tentative decision by the IFRS Interpretation Committee and the Exposure Drafts, there was considerable uncertainty among tax preparers how uncertain tax positions should be recognized, with requests for guidance addressed to the Interpretations Committee on this issue. Future research on the effectiveness and information content of uncertain tax positions following IFRS will therefore need to deal with heterogeneous accounting practices over the sample observation and period under review. It may be some time until we know whether and how firms can

cope with this regulation. However, even in the U.S. researchers have found evidence of inconsistent application of FIN 48 by companies (Blouin & Robinson, 2014; De Simone et al., 2014), which did not prevent them from investigating the information contained in the disclosure of UTBs. Nevertheless, the recognition of uncertain tax positions also depends on applicable tax laws, laws requiring immediate tax payments, and tax authorities' enforcement strength. These aspects may be best handled in multinational contexts in order to provide evidence that is transferable to other jurisdictions and institutional settings.

3. Valuation Allowances

3.1. U.S. GAAP accounting rules

In 1992, SFAS No. 109 introduced the valuation allowance (VA) for firms preparing their accounts following U.S. GAAP. Valuation allowances (VAs), today codified, are accounts representing impairments on deferred tax assets. Since deferred tax assets have initially to be fully recognized (ASC 740-10-30-5), a VA reserve is established against the deferred tax asset account as an offset for the amount that is not *more likely than not* to be realized. In order to assess their realizability, future reversals of deferred tax liabilities, future taxable income, taxable income of prior carryback years if applicable under the incumbent tax law, and tax-planning strategies which allow companies to benefit from deferred tax assets need to be considered (ASC 740-10-30-18). Even indications for negative prospects given prior years' evidence have to be regarded (ASC 740-10-30-21). However, the amount set as a VA depends on management's judgment and expectations about future firm performance.

One specific case, when VAs are set, deals with loss carryforwards: deferred tax assets have also to be recognized when losses are incurred, which in subsequent years may lead to reduced tax expenses if those losses are carried forward for tax purposes. However, since indicators for negative future prospects have to be taken into account when judging the realizability of the deferred tax asset even on those loss carryforwards, it is not unusual for VAs to be set against deferred tax assets on loss carryforwards since the most recent year already incurred losses (ASC 740-10-30-21).

3.2. Evidence in prior literature

Early studies on VAs examine how companies apply SFAS No. 109 and the different determinants of VAs (e.g., Behn, Eaton, & Williams, 1998; Miller & Skinner, 1998). New branches of research on fully capturing the information provided by VAs were soon identified.

As one aspect, it has been researched whether VAs are an instrument of earnings management. Frank and Rego (2006) examine capital-market-based earnings management incentives to show that managers use VAs to smooth earnings towards the mean analyst earnings forecast and to cross over it. However, they find no evidence for VAs being used also to reach other reported earnings targets, i.e., positive and prior years' earnings or 'big bath' accounting behavior. When indirect effects of changes in other components of a firm's net deferred tax liabilities on VAs are excluded, Phillips, Pincus, Rego, and Wan (2004) find no evidence for earnings management via the VA. Christensen, Paik, and Stice (2008) observe that firms do not use the VA to establish a reserve which could be used in subsequent periods to bolster earnings ('big bath'). A contextual approach by Bauman, Bauman, and Halsey (2001) also reveals no use of the VA to manipulate earnings by invoking an earnings 'big bath', avoiding losses and earnings decreases. They only find weak evidence of efforts to meet analysts' forecasts. Chao, Kelsey, Horng, and Chiu (2004) show, by contrast, that VA changes can be explained by 'big bath' accounting rather than income smoothing. Burgstahler, Elliott, and Hanlon (2002) find that managers use the VA to increase earnings to avoid losses and reductions of the VA, which cannot be explained by higher expected future taxable income. Schrand and Wong (2003) reveal an association between changes in discretionary VAs and deviations of unadjusted earnings for a sample of commercial banks. They show that these changes are in line with income-increasing and income-decreasing earnings management if unadjusted earnings are below (above) consensus analyst forecasts or average historical earnings.

However, managerial discretion on VAs cannot only be used for incentive-driven earnings management but also to inform investors about managers' private information. Christensen et al. (2008) suggest that firms with larger-than-expected VAs are a reflection of information disclosed by management about the company's less profitable future. In that regard, Miller and Skinner (1998) also reveal that VAs are determined by the companies' deferred tax assets and its levels of expected future taxable income consistent with SFAS No. 109. In other words, they find only little evidence of earnings management. Visvanathan (1998) provides supporting evidence in a study on VAs and motives for earnings management given by debt covenants and incentives in bonus plans. An event

study by Kumar and Visvanathan (2003) shows that news on VA changes is negatively associated with stock prices, caused by market participants' revised expectations about the company's future earnings and the realizability of deferred tax assets. Consistent with this, Jung and Pulliam (2006) reveal that VAs contain incremental information beyond publicly available information given in annual reports, representing managers' private information concerning predicted future earnings. Dhaliwal, Kaplan, Laux, and Weisbrod (2013) also suggest that managers use private forward-looking information in setting the VA since VAs are shown to be predictive of the persistence of accounting losses over the subsequent one to three years.

Building on the perception of VAs as sources of incremental information, several studies investigate market reactions. Amir and Sougiannis (1999) show that investors value companies' earnings and net assets less if these firms have VAs. In that line, the study by Ayers (1998) reveals that the VA is negatively associated with the market value of equity. It highlights the value-relevant information given by VAs beyond the information provided under APB No. 11. Consistent with this, Bauman and Das (2004) show that the positive association between the level of expected future profitability—represented by deferred tax assets—and share prices is impacted by the implementation by law of VAs. Evidence by Amir, Kirschenheiter, and Willard (1997) indicates that, by contrast, when net deferred taxes are split up into its components, VAs provide no value-relevant information for investors. Bauman and Bauman (2002) show that the earnings effects of VA changes are associated with stock returns, but that market participants do not attribute information to discretionary or non-discretionary VA changes since there is no evidence of stock price reaction.

Research so far indicates that VAs are to some extent used to manage earnings, but also contain private information which is picked up by capital market investors. However, it is still unclear for which financial reporting incentives VAs are preferably used to achieve earnings targets. Moreover, it is unclear how the level of earnings management and private information content reflected by VAs interact with each other and how investors react to obscured information in order to meet or beat earnings targets.

3.3. IFRS accounting rules and avenues for further research

In accordance with sections 28, 29, and 34 of IAS 12, deferred tax assets in general and deferred tax assets on loss carryforwards in particular may be recognized if it is likely they will be recoverable in the future. Recoverability is defined to be conditional on having either sufficiently

high taxable income or deferred tax liabilities in subsequent periods of reversal or in periods to which the taxable benefit may be carried back. Additionally, tax benefits and liabilities need to be owed to the same tax authority. If these criteria are not met, first-time recognition is prohibited. IASB (2003) defines the term *probable* to be in line with the *more likely than not* approach of U.S. GAAP, meaning a probability of realization of more than 50% resulting in no differences in the assessment under U.S. GAAP. When circumstances and in turn the judgement of the usability of deferred tax assets after a first-time recognition change, the values of deferred tax benefits need to be adjusted. These adjustments are also given in tax notes such as those found in financial reports under U.S. GAAP. However, IFRS notes on income taxes lack a detailed disclosure of all deferred tax assets adjusted in prior years because only adjustments affecting current year's actual tax expense are released in the tax rate reconciliation. Also in contrast to U.S. GAAP regulations, IFRS does not allow for the first-time recognition of the full amount and for adjusting the value downwards in the form of impairments, since IFRS follows the *affirmative judgement approach* instead of the *impairment approach* under U.S. GAAP (Meyer et al., 2010). This different assessment leads to missing information in IFRS tax notes on the maximum potential tax benefit and the size of the initial impairment, as only the probable value of recognition is considered. Instead, section 81 (e) of IAS 12 requires the disclosure of the amount of deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax assets are recognized.[3] The Exposure Draft on Income Taxes proposes introducing a VA consistent with ASC 740-10 (IASB, 2009), which however has not been implemented yet and is not expected to be implemented in the near future (PwC, 2013a).

If a VA comparable to those VAs under U.S. GAAP is tried to be reconciled, every value adjustment of deferred tax assets given in tax rate reconciliations as well as all deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax asset has been recognized, will need to be hand-collected and evaluated from previous years. This may incur substantial survey efforts and measurement errors. Additionally, disclosure practice and tax note quality may vary among companies, making general approaches more difficult. However, Bauman et

[3] This requirement is often misinterpreted by professional practitioners, resulting in companies disclosing the amount of deferred tax assets which is not recognized, instead of the amount of deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax asset is recognized (Meyer, Loitz, Linder, & Zerwas, 2010).

al. (2001) already reveal that the extent of VA changes reported in the effective tax rate reconciliation is a better measure of the income statement effect than its proxy generated by the net change in the VA account under U.S. GAAP. This leaves promising avenues for future research under IFRS. With respect to the evidence identified by prior research, it is of obvious interest whether capital markets react similarly to comparable information content in terms of deferred taxes if the actual information is obliquely provided rather than obviously disclosed. Moreover, because Heiman-Hoffman and Patton (1994) show that deferred tax asset estimates are in means significantly different depending on whether the affirmative judgement approach or the impairment approach is used, it is even more important to separately investigate the information given by the unrecognized amount on deferred tax assets under IFRS.

4. Foreign Earnings Designated as Permanently Reinvested

4.1. U.S. GAAP accounting rules

With regard to deferred taxes, there is another special case that has to be considered: *foreign earnings designated as permanently reinvested* (PRE).[4] Foreign earnings that are not remitted to the parent company generally result in temporary differences (also referred to as 'outside basis differences') since the book value of the investment shown in the consolidated financial statement differs from its tax basis (ASC 740-30-25-2). For these temporary differences deferred tax liabilities have to be recognized (ASC 740-30-25-6) in order to account for future remittance of foreign earnings that will cause repatriation tax payments for domestic tax rates. Even if the U.S. were to apply the world income principle, tax liabilities of foreign earnings would be deferred until these earnings are repatriated. Taxes already paid on those earnings in foreign jurisdictions are creditable on payable U.S. tax as long as they are lower or equal to the amount payable in order to ensure that there is no economic double taxation.

However, these deferred tax liabilities are not recognized under U.S. GAAP if foreign earnings are deemed to be reinvested permanently in the foreign subsidiary or the foreign joint venture (ASC 740-30-25-18). In order to make use of this exemption clause, it is necessary according to ASC 740-30-25-17 to provide *sufficient evidence* that the profits of the foreign subsidiary or the

[4] ASC 740-30-25-18 (b) also addresses that for undistributed earnings which arose on or before December 15, 1992 of domestic subsidiaries and domestic joint ventures no temporary differences have to be recognized. The treatment of these undistributed domestic profits will not be discussed in this review—neither for IFRS.

joint venture have been or will be invested *indefinitely* or will be remitted in a tax-free liquidation ('indefinite reversal criteria'). The related temporary differences for which no deferred taxes were recognized have to be mentioned in the notes of the balance sheet. However, for practical purposes it is allowed to omit the information related to unrecognized deferred tax liabilities when a corresponding statement is provided (ASC 740-30-50-2).

Since at 35 percent the U.S. corporate tax rate is one of the world's highest domestic tax rates, U.S. multinationals are quite interested in trapping earnings all over the world in order to save taxes. This has encouraged Congress to provide multinationals a 'tax holiday' via the American Jobs Creation Act of 2004 (AJCA). AJCA offered multinationals the opportunity to repatriate PRE on or before June 30, 2003 at a reduced rate of 5.25 percent in 2004 and 2005. The indirect effect of this tax holiday was to create jobs in the U.S. since these repatriated funds could only be used for limited purposes within companies, e.g., funding for worker hiring and training, infrastructure, research and development, capital investments, and stabilizing companies' financial situation for the purpose of job retention and creation. However, the alleviation was limited to 500 million U.S. dollars and the excess of the average repatriations during the previous five years, excluding the highest and lowest amount for mean calculation (see 26 U.S.C. §965(b) (1) and (2)). This tax holiday incentivized U.S. corporations to increasingly repatriate PRE, which also attracted the attention of researchers.

4.2. Evidence in prior literature

One stream of tax research on PRE deals explicitly with information disclosed by companies in their financial reports. Even though ASC 740-30, as described above, requires companies to disclose specific information on PRE, managers are given (although currently within narrow boundaries) some discretion over when and how this information is provided. Consistent with this, Ayers, Schwab, and Utke (2015) find that a number of U.S. taxable firms in the S&P 500 do not meet disclosure requirements on PRE. This is consistent with disclosures being opportunistically obscured if they reflect negatively on the firm and incur higher political costs. The transparency of disclosures is also investigated by Eiler and Kutcher (2014). They show that with a higher degree of tax complexity, disclosures about the unrecognized tax liability on PRE become less transparent. In contrast to Ayers et al. (2015), Eiler and Kutcher (2014) find that the greater the amount of estimated tax liability on PRE, the more managers are compelled to be transparent. Overall, the

firm disclosure environment and the sophistication and quality of tax departments do not matter in that regard.

Turning their attention to earnings management, Blouin, Krull, and Robinson (2012) examine whether firms' decision to repatriate PRE is related to their financial reporting incentives. Morrow and Ricketts (2014) expand this to include decisions on repatriating foreign earnings explicitly during the tax holiday that was afforded by AJCA in 2004. Both studies reveal that financial reporting incentives drive companies' decisions on repatriation (Blouin et al., 2012; Morrow & Ricketts, 2014), and that even maximum available tax savings during the tax holiday were used only to the extent necessary for achieving financial reporting goals (Morrow & Ricketts, 2014). Prior evidence by Krull (2004) also illustrates that PRE are used to meet or beat analyst forecasts but not to decline or smooth earnings. By contrast, Krull (2004) highlights that disclosures on permanently reinvested earnings also reflect investment and tax incentives. However, firms with financial constraints in terms of more financial covenants and higher debt financing repatriated less during the tax holiday, indicating the relevance of firms' financial flexibility for their repatriation decisions (Albring, Mills, & Newberry, 2011). The study by Blouin and Krull (2009) reveals in this context that firms which repatriated during the tax holiday face lower returns on assets and market-to-book ratios, have higher free cash flows, and invest their repatriated earnings more often in share repurchases. A survey conducted by Graham, Hanlon, and Shevlin (2011) of around 600 tax executives found that for repatriation decisions of foreign earnings, the effects on financial accounting and the effects on income tax payments are equally important.

Another stream of research in this area examines the composition of PRE, i.e., whether these earnings are reinvested as financial or operating assets and what implications this has. Evidence in this context reveals that for the location of foreign earnings designated as permanently reinvested, both tax and growth considerations are important (Blouin, Krull, & Robinson, 2014). However, permanent reinvestments in financial assets abroad, i.e., trapped cash in a foreign jurisdiction, lead to inefficiencies in internal capital markets of multinational corporations with permanently reinvested earnings (Blouin et al., 2014), lower profitability of companies' foreign acquisitions, and negative market reactions to acquisition announcements (Edwards, Kravet, & Wilson, 2016). Waegenaere and Sansing (2008) use a formal analytical model to show that firm value decreases if companies reinvest their foreign earnings in financial assets instead of operating assets. Collins, Hand, and Shackelford (2001) and Bauman and Shaw (2008) reveal that the reporting of unrecognized deferred tax liabilities on PRE is perceived to be a potential tax liability, which contrasts with

the case when no amounts are reported since investors negatively capitalize the information disclosed in stock prices. Oler, Shevlin, and Wilson (2007) confirm these results for the period before the AJCA announcement but find that upon its announcement, the capital market reduced the extent to which deferred repatriation tax is negatively capitalized in current stock prices, standing for expected reduced tax liabilities via repatriations during the tax holiday. By contrast, Bryant-Kutcher, Eller, and Guenther (2008) find that the relationship identified by Collins et al. (2001) only holds for firms reinvesting in excessive cash holdings. According to the theory, firms hold large amounts of cash dedicated as PRE primarily to avoid taxes or to manage earnings. This hampers internal financing, cash flow issues, profitability, and investment opportunities.

In summary, the literature survey indicates that PRE are currently attracting much attention as a research topic. Evidence suggests that the information provided by PRE is, both in terms of disclosure and the amounts set, subject to manager discretion. The use of PRE seems to be indicative of the companies' investment opportunities and future prospects.

4.3. IFRS accounting rules and avenues for further research

Like U.S. GAAP accounting rules, IFRS accounting rules also provide an exception for recognizing deferred tax liabilities on unremitted foreign earnings. However, the circumstances allowing such an exception differ to U.S. GAAP. Consistent with section 39 of IAS 12, firms are permitted to not recognize a deferred tax liability on PRE if the parent, investor, joint venturer or operator is able to control the timing of the reversal of the temporary difference, and if it is *probable* that the temporary difference will not reverse in the *foreseeable future*. The terms *probable* and *foreseeable future* contrast in their practical meaning to the U.S. GAAP terms *sufficient evidence* and *indefinite* (Epstein & Macy, 2011). However, in line with U.S. GAAP, financial reports consistent with IFRS have to disclose the amount of temporary differences related to permanently reinvested earnings for which no deferred tax liabilities have been recognized (section 81 f of IAS 12). Reporting the amount of unrecognized deferred tax liabilities is only encouraged if practicable (section 87 of IAS 12).

Pursuant to section 39 of IAS 12, besides being applicable to subsidiaries, branches, and interests in joint arrangements the exemption clause can also be applied by associated companies. However, one condition is that the process of the release of temporary differences can be controlled. Frequently, this condition is not met by associates (section 42 of IAS 12). Thus, section 39 of IAS

12 is often only applicable for subsidiaries or branches (section 40 of IAS 12) in analogy to U.S. GAAP.

Concerning the terms related to the probability of reversal, consistent with the use of the term *probable* in IFRS accounting language, its meaning points to a likelihood of no reversal of greater than 50 percent. This can be assumed to be a much weaker condition than the management assertion for *sufficient evidence* required under U.S. GAAP, which may lead to much more discretion (Epstein & Macy, 2011).

Moreover, IFRS accounting rules do not provide a definition of the term *foreseeable future*. In contrast to U.S. GAAP accounting rules it can be assumed, again, that this regulation can be interpreted as being less restrictive and spans a shorter period (Graham et al., 2012). This lack of a concrete time horizon in combination with the dissimilar concept of reversal likelihood makes it easier under IFRS for managers to designate foreign earnings as permanently reinvested (Epstein & Macy, 2011). Consequently, it is of particular interest whether firms with financial accounts consistent with IFRS show more extensive use of PRE than firms with financial accounts prepared according to U.S. GAAP, and whether the information content of PRE is comparable between the two.

In addition to the differences between U.S. GAAP and IFRS accounting rules, the taxation rules applicable at the parent companies' domicile also have substantial influence on the amounts given in tax notes on PRE. These amounts are influenced, for instance, by whether firms are subject to territorial or worldwide tax regimes (see Markle, 2016), whether and if so, which kind of double taxation treaties exist, or how domestic corporate tax law calculates taxable income. This variety may hamper international cross-country research settings due to the top-level tax expertise necessary to conduct corresponding research and the hardly comparable differences between amounts disclosed on PRE by companies across countries. However, the effort is worth undertaking.

Moreover, the stream of research addressing the information content of PRE and their corresponding unrecognized deferred tax liabilities in terms of tax avoidance is fairly weak to date (see e.g., Blouin et al., 2014; Krull, 2004). It may be assumed that it is too obvious that PRE are related to tax avoidance incentives and its reporting. However, we are still missing evidence on the relationship between common tax avoidance measures (see Hanlon & Heitzman, 2010, for a detailed description) and amounts disclosed on PRE.

5. Book-Tax Differences

5.1. U.S. GAAP accounting rules

The book-tax difference (BTD), also referred to as the book-tax gap, describes the difference in magnitude of income earned as accounting income and taxable income. On the one hand, it is caused by different sets of rules for accounting and tax purposes since both standards follow different objectives for assessing income (Hanlon & Heitzman, 2010). On the other hand, it can also be the result of greater discretion afforded by accounting standards (Mills & Newberry, 2001; Plesko, 2004; Manzon & Plesko, 2002), which can be used to bolster accounting earnings, and efforts to minimize taxable income in order to cut down on tax expenses (Crabtree & Maher, 2009; Tang & Firth, 2011). These differences can be characterized as either temporary, meaning that the difference between financial accounting and tax base is expected to reverse in the future, or permanent, meaning that there will be no reversal.

The amount of the BTD to which a firm is exposed is not directly observable in the financial statements. To calculate BTDs, taxable income needs to be subtracted from financial reporting income. However, taxable income at the entity level is usually not publicly available, meaning that this item must be estimated based on the amount of current tax expense disclosed. Usually it is calculated by dividing with the statutory tax rate (Manzon & Plesko, 2002). Consistent with ASC 740-10-50-12, the domestic federal statutory tax rate for public entities is found in the tax rate reconciliation, which is 35% in the U.S. The current tax expense has to be disclosed according to ASC 740-10-50-9.

The tax rate reconciliation according to ASC 740-10-50-12 also provides more information on the estimated amount and nature of each reconciling item that causes a significant differential between the domestic federal statutory tax rate and the effective tax rate. These items can have both temporary and permanent characteristics. The Codification lacks guidance on how to interpret the term *significant* in this context. However, section 210.4-08(h) of SEC Regulation S-X requires that only major amounts which account for at least 5% of the expected amount of tax expense calculated with the statutory tax rate have to be disclosed. But firms may aggregate or disaggregate specific items in the reconciliation to circumvent this requirement, even if groupings ought to be consistent over time (PwC, 2013b). Therefore, in addition to the items commonly used in professional practice, the selection of items listed in the tax rate reconciliation and their respective

amounts can provide insights into a company's tax planning structure and may also be indicative of their disclosure policy.

In addition to tax rate reconciliations, the components of net deferred tax assets or liabilities in accordance with ASC 740-10-50-2 and ASC 740-10-50-6 also provide insights into the public entities' balance sheet items that cause changes in temporary differences. In analogy to the rules regarding tax rate reconciliations, only items causing significant amounts of temporary differences which give rise to deferred tax assets and liabilities have to be disclosed with their respective dollar amounts. Section 210.4-08(h) of SEC Regulation S-X again sets a threshold of 5% of the expected total tax expense for the disclosure of these various types of temporary differences.

5.2. Evidence in prior literature

The way in which taxable income is determined by tax accounting differs from, and is to some extent more conservative, than financial accounting (see Graham et al., 2012; Pratt, 2011; Revsine, Collins, Johnson, & Mittelstaedt, 2012; Watts, 2003; see for a different view Heltzer, 2009). Therefore, the difference between these two approaches may point to several issues.

One aspect is the link between BTDs and earnings persistence. The study by Hanlon (2005) is the first to reveal that for firm-years with large BTDs, earnings are less persistent in subsequent periods. Blaylock, Shevlin, and Wilson (2012) link the stream of earnings persistence with literature on earnings management and tax avoidance in terms of BTDs. In regard to Hanlon (2005), they find that her evidence holds for large BTDs when they are likely to be driven by upward earnings management. Their results reveal that the earnings and accruals persistence of firms with large BTDs is lower if they have high discretionary accruals (indicative of earnings management) and higher if they have low five-year cash effective tax rates (indicative of tax avoidance). Raedy, Seidman, and Shackelford (2011) show that the disaggregated BTD by deferred tax assets and liabilities given by the tax footnote schedule and the tax rate reconciliation are also associated with earnings persistence and future earnings growth.

Theory states that BTDs could also be related to earnings management. Therefore, Phillips, Pincus, and Rego (2003) use deferred tax expenses as a proxy for BTDs and find that deferred tax expenses are used to avoid losses and earnings declines, but fail to find an association with efforts to meet analysts' forecasts. By decomposing deferred tax assets into the different types of temporary differences causing deferred taxes given by income tax footnote disclosures, Phillips et al.

(2004) find that primarily deferred tax assets which can be attributed to revenue and expense accruals and reserves are indicative of earnings management to avoid negative earnings changes. Mills and Newberry (2001) illustrate that with higher incentives to manage earnings by financial reporting costs, BTDs increase. This relationship is put down to ownership types and capital market pressures resulting from the comparison of public and private firms. As for accounting fraud, an extreme case of earnings management, Ettredge, Sun, Lee, and Anandarajan (2008) provide evidence that deferred tax expenses but not BTDs are associated with earnings overstatement fraud.

In this regard, Hanlon, Krishnan, and Mills (2012) reveal that audit fees are higher if BTDs are large. Further tests show that this relationship can be ascribed to earnings quality concerns, meaning that BTDs not only explain audit fees but also create additional audit complexity and audit risk, which is rewarded.

Concerning tax avoidance, Wilson (2009) finds that firms that are accused of tax sheltering have larger BTDs and more aggressive financial reporting practices. However, these BTDs contain information on both earnings management and tax sheltering. Using internal data from the IRS, Lisowsky (2010) confirms that BTDs, but also UTBs, are related to tax shelter usage. The studies by Frank, Lynch, and Rego (2009) and Lennox, Lisowsky, and Pittman (2013) link this stream of research with the streams of earnings management and accounting fraud and examine whether firms simultaneously manage book income (aggressively) upward and taxable income downward. In this context, however, they use BTDs as a proxy for tax aggressiveness and do not take into account that BTDs may also capture earnings management. Their evidence contrasts with Frank et al. (2009), who find a strong positive relationship between aggressive tax and financial reporting whereas Lennox et al. (2013) find that tax aggressive U.S. public firms are less likely to commit accounting fraud. However, this result is sensitive to tax avoidance measures. Mills (1998) reveals that the probability of proposed audit adjustments by the IRS increases with rising magnitude of BTDs, highlighting that firms cannot optimize both book income and taxable income at no cost. Seidman (2010) expands the idea developed by Desai and Dharmapala (2006) to extract the earnings management component of BTDs and adjusts this model to include other influential factors on BTDs such as GAAP changes and macroeconomic conditions. She finds that the unadjusted BTD is reasonable for capturing earnings management, but that after eliminating the explanatory power of GAAP changes, the adjusted BTD is a better proxy for tax sheltering.

Also the capital market's perception of BTDs has been a focus of research. Comprix, Graham, and Moore (2011) also decompose BTDs in their temporary and permanent components and show

that every BTD, but especially the permanent BTD, is perceived by market participants as uncertain. Chi et al. (2014), who also regard the temporary and permanent components of BTDs, find evidence that the taxable income to book income ratio is predictive of earnings growth and abnormal stock returns and that both short sellers and insiders arbitrage the mispricing of BTDs. In that regard, the information content of BTD can primarily be ascribed to its temporary components which stand for greater discretion by managers. A prior study by Lev and Nissim (2004) already reveals that the taxable income to book income ratio is able to predict future earnings changes and that this information is reflected by the earnings price ratio in the period since SFAS No. 109 implementation. In a study of bond credit ratings Crabtree and Maher (2009) illustrate, consistently with a U-shaped relationship for new bond issues, that both small and large BTDs come with a lower bond rating. In line with this, Ayers, Laplante, and McGuire (2010) find that both large positive and large negative changes of BTDs are more likely to result in a less favourable credit rating.

All these reviewed studies indicate that the information content of BTDs is extensive, but is to some extent conflicting. More research on BTDs is desirable so as to identify various phenomena related to BTDs depending on specific circumstances.

5.3. IFRS accounting rules and avenues for further research

In analogy to U.S. GAAP standards, IFRS standards requires both tax rate reconciliations (section 81 c of IAS 12) and overviews of each type of temporary difference causing deferred tax assets and liabilities (section 81 g of IAS 12). In terms of the tax rate reconciliation disclosed, section 84 of IAS 12 refers explicitly to the information it provides to financial statement users for assessing unusual differences between tax income and accounting profit and significant factors which affect these differences. In contrast to U.S. GAAP accounting standards, it is not clear which tax rate companies should use for calculating the expected tax expense so as to provide the most meaningful information to financial statement users. IFRS allows for using either the domestic tax rate of the parent company's country of domicile, the aggregated tax rate across all jurisdictions in which the company pays taxes, or the aggregated tax rate reconciliation of all separately calculated reconciliations for every jurisdiction in which the company operates (section 85 of IAS 12). This rule causes inconsistencies in application between financial statements which may hinder empirical studies when differences occur between the estimated tax income depending on whether or not foreign tax rates are taken into consideration for the expected tax rate. Additionally, both national

and international taxation rules and double-taxation treaties, which all differ across countries, will lead to potential incomparability of estimated tax income and consequently BTDs in cross-country settings. In that regard, it is not unusual for every entity within a group to be taxed on an individual basis. Also, even local tax rates differ within countries. Owing to these rules, consolidated financial statements bear by definition in contrast to the U.S. tax system greater noise when the group's respective tax income is calculated. Moreover, section 84 of IAS 12 mentions only a minimum of reconciling items of the tax rate reconciliation that may affect the difference between tax expense (income) and accounting profit: revenues that are tax-exempt, expenses that are not deductible, effects of tax losses, and effects of foreign tax rates. But the principle of materiality still holds. Therefore, this similarity to U.S. GAAP accounting provides an opportunity for understanding companies' BTD structure by looking closely at companies' voluntarily but commonly provided detailed disclosure on reconciling items that affect the relationship between tax income and accounting profit.

Section 81 g of IAS 12, which deals with overviews of each type of temporary difference causing deferred tax assets and liabilities, lacks a minimum level of detail and clear specification of items to be mentioned. Regardless of the principle of materiality, even a specification is missing of amounts that are significant. This impairs comparability between companies. Nevertheless, there may be promising information hidden in these types of temporary differences, as already revealed by Phillips et al. (2004) for U.S. GAAP.

However, in the area of BTDs some evidence already exists even for companies that prepare their financial accounts according to IFRS. In particular, these studies often examine whether the level of book-tax conformity is important for the perception of BTDs. Atwood, Drake, Myers, and Myers (2012) find that firms which are exposed to a higher level of book-tax conformity engage in less tax avoidance and that this still holds if firms report their financial statements under IFRS instead of local GAAP. Analogously, an international study across 32 different countries by Tang (2015) finds that levels of earnings management and tax avoidance are lower if book-tax conformity is high, which is measured by nondiscretionary BTDs, and that there are no differences between IFRS and non-IFRS adopters. By contrast, Blaylock, Gaertner, and Shevlin (2015) find in an international setting of 34 countries that with a rising level of book-tax conformity the level of earnings management increases as well. Controlling for IFRS adoption does not affect their results. This inconsistent and scarce evidence highlights that more research needs to be done especially in IFRS settings. Using a setting with listed German enterprises that follow IFRS accounting standards,

Frey and Möller (2015) find in contrast to the results of Phillips et al. (2003) for U.S. firms that it is not deferred tax expenses, but permanent differences and BTDs that are indicative for earnings management to avoid losses beyond discretionary accruals.

All in all, the evidence concerning BTDs in IFRS settings is still scarce, especially in regard to the informativeness of book-tax conformity concerning earnings persistence, earnings management, tax avoidance, and investor reactions. We look forward to seeing more research on these topics. Researchers' efforts to address and overcome these issues will for sure contribute to the understanding of BTDs' information content.

6. Conclusion

In this study, we review the literature on the information content of tax-related positions in U.S. GAAP financial statements and demonstrate the similarities and disparities between U.S. GAAP and IFRS accounting rules when it comes to tax-related positions. While the effects of tax-related positions under U.S. GAAP, namely unrecognized tax benefits, valuation allowances, permanently reinvested earnings, and book-tax differences, have been extensively researched, we find many areas where the results are inconclusive. Nevertheless, the available evidence indicates that tax-related positions contain predominantly relevant information for financial statement users in terms of earnings management, future earnings prospects, firm value, and tax avoidance.

However, the review shows that there is so far no research on the information content of comparable tax-related positions provided by IFRS financial statements. By outlining the relevant IFRS accounting rules, comparing them to U.S. GAAP standards, and giving an overview of prior research questions, we identify several research opportunities for providing an understanding of the information content of tax-related positions under IFRS. The study points out that despite measurement differences and heterogeneous accounting practices in IFRS uncertain tax positions their information content might be comparable to UTBs. Additionally, the study shows that there are ways to reconcile tax notes provided under IFRS to VAs more or less according to U.S. GAAP. Concerning PRE we find large similarities between accounting under U.S. GAAP and IFRS even if the extent of usage of PRE might differ, especially because of different taxation rules. These different taxation rules as well as inconsistent applicable tax rates also raise issues for measuring BTDs in IFRS settings. But a few prior studies already showed that one can deal with these issues.

We believe that further research is necessary to fully understand the relevance of tax-related accounting positions for the informativeness of financial statements in order to precisely identify the influence of financial accounting standards.

References

Albring, S. M., Dzuranin, A. C., & Mills, L. F. (2005). Tax Savings on Repatriations of Foreign Earnings under the Jobs Act. *Tax Notes*, *August 8*, 655–669.

Albring, S. M., Mills, L. F., & Newberry, K. J. (2011). Do Debt Constraints Influence Firms' Sensitivity to a Temporary Tax Holiday on Repatriations? *Journal of the American Taxation Association*, *33*(2), 1–27.

Amir, E., Kirschenheiter, M., & Willard, K. (1997). The Valuation of Deferred Taxes. *Contemporary Accounting Research*, *14*(4), 597–622.

Amir, E., & Sougiannis, T. (1999). Analysts' Interpretation and Investors' Valuation of Tax Carryforwards. *Contemporary Accounting Research*, *16*(1), 1–33.

Atwood, T. J., Drake, M. S., Myers, J. N., & Myers, L. A. (2012). Home Country Tax System Characteristics and Corporate Tax Avoidance: International Evidence. *The Accounting Review*, *87*(6), 1831–1860.

Ayers, B. C. (1998). Deferred Tax Accounting under SFAS No. 109: An Empirical Investigation of Its Incremental Value-Relevance Relative to APB No. 11. *The Accounting Review*, *73*(2), 195–212.

Ayers, B. C., Laplante, S. K., & McGuire, S. T. (2010). Credit Ratings and Taxes: The Effect of Book-Tax Differences on Ratings Changes. *Contemporary Accounting Research*, *27*(2), 359–402.

Ayers, B. C., Schwab, C. M., & Utke, S. (2015). Noncompliance with Mandatory Disclosure Requirements: The Magnitude and Determinants of Undisclosed Permanently Reinvested Earnings. *Accounting Review*, *90*(1), 59–93.

Bauman, C. C., & Bauman, M. P. (2002). The Deferred Tax Asset Valuation Allowance and Earnings Quality. *Review of Accounting and Finance*, *1*(1), 72–87.

Bauman, C. C., Bauman, M. P., & Halsey, R. F. (2001). Do Firms Use the Deferred Tax Asset Valuation Allowance to Manage Earnings? *The Journal of the American Taxation Association*, *23*(s-1), 27–48.

Bauman, M. P., & Das, S. (2004). Stock Market Valuation of Deferred Tax Assets: Evidence from Internet Firms. *Journal of Business Finance & Accounting*, *31*(9-10), 1223–1260.

Bauman, M. P., & Shaw, K. W. (2008). The Usefulness of Disclosures of Untaxed Foreign Earnings in Firm Valuation. *The Journal of the American Taxation Association*, *30*(2), 53–77.

Behn, B. K., Eaton, T. V., & Williams, J. R. (1998). The Determinants of the Deferred Tax Allowance Account Under SFAS No. 109. *Accounting Horizons*, *12*(1), 63–78.

Blaylock, B., Gaertner, F., & Shevlin, T. (2015). The association between book-tax conformity and earnings management. *Review of Accounting Studies*, *20*(1), 141–172.

Blaylock, B., Shevlin, T., & Wilson, R. J. (2012). Tax Avoidance, Large Positive Temporary Book-Tax Differences, and Earnings Persistence. *The Accounting Review*, *87*(1), 91–120.

Blouin, J., & Krull, L. (2009). Bringing It Home: A Study of the Incentives Surrounding the Repatriation of Foreign Earnings Under the American Jobs Creation Act of 2004. *Journal of Accounting Research*, *47*(4), 1027–1059.

Blouin, J. L., Krull, L. K., & Robinson, L. A. (2012). Is U.S. Multinational Dividend Repatriation Policy Influenced by Reporting Incentives? *The Accounting Review*, *87*(5), 1463–1491.

Blouin, J. L., Krull, L. K., & Robinson, L. A. (2014). The Location, Composition, and Investment Implications of Permanently Reinvested Earnings. *SSRN Electronic Journal*.

Blouin, J. L., & Robinson, L. A. (2014). Insights from Academic Participation in the FAF's Initial PIR: The PIR of FIN 48. *Accounting Horizons*, *28*(3), 479–500.

Bryant-Kutcher, L., Eller, L., & Guenther, D. A. (2008). Taxes and Financial Assets: Valuing Permanently Reinvested Foreign Earnings. *National Tax Journal*, *61*(4), 699–720.

Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, *24*(1), 99–126.

Burgstahler, D. C., Elliott, W. B., & Hanlon, M. (2002). How Firms Avoid Losses: Evidence of Use of the Net Deferred Tax Asset Account. *SSRN Electronic Journal*.

Cazier, R., Rego, S., Tian, X., & Wilson, R. (2015). The impact of increased disclosure requirements and the standardization of accounting practices on earnings management through the reserve for income taxes. *Review of Accounting Studies*, *20*(1), 436–469.

Chao, C.-L., Kelsey, R. L., Horng, S.-M., & Chiu, C.-Y. (2004). Evidence of Earnings Management from the Measurement of the Deferred Tax Allowance Account. *The Engineering Economist*, *49*(1), 63–93.

Chi, S. S., Pincus, M., & Teoh, S. H. (2014). Mispricing of Book-Tax Differences and the Trading Behavior of Short Sellers and Insiders. *The Accounting Review*, *89*(2), 511–543.

Christensen, T. E., Paik, G. H., & Stice, E. K. (2008). Creating a Bigger Bath Using the Deferred Tax Valuation Allowance. *Journal of Business Finance & Accounting*, *35*(5-6), 601–625.

Ciconte, W., Donohoe, M. P., Lisowsky, P., & Mayberry, M. A. (2014). Predictable Uncertainty: The Relation between Unrecognized Tax Benefits and Future Income Tax Cash Outflows. *SSRN Electronic Journal*.

Collins, J. H., Hand, J. R. M., & Shackelford, D. A. (2001). Valuing Deferral: The Effect of Permanently Reinvested Foreign Earnings on Stock Prices. In J. R. Hines (Ed.), *International taxation and multinational activity* (pp. 143–172). Chicago: University of Chicago Press.

Comprix, J., Graham, R. C., & Moore, J. A. (2011). Empirical Evidence on the Impact of Book-Tax Differences on Divergence of Opinion among Investors. *The Journal of the American Taxation Association*, *33*(1), 51–78.

Crabtree, A., & Maher, J. J. (2009). The Influence of Differences in Taxable Income and Book Income on the Bond Credit Market. *The Journal of the American Taxation Association*, *31*(1), 75–99.

De Simone, L., Robinson, J. R., & Stomberg, B. (2014). Distilling the reserve for uncertain tax positions: the revealing case of black liquor. *Review of Accounting Studies*, *19*(1), 456–472.

Desai, M. A., & Dharmapala, D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics*, *79*(1), 145–179.

Dhaliwal, D. S., Kaplan, S. E., Laux, R. C., & Weisbrod, E. (2013). The Information Content of Tax Expense for Firms Reporting Losses. *Journal of Accounting Research*, *51*(1), 135–164.

Drake, K. D., Lusch, S. J., & Stekelberg, J. (2015). Investor Valuation of Tax Avoidance and Tax Risk: Evidence from the Pre- and Post-FIN 48 Periods. *SSRN Electronic Journal*.

Edwards, A., Kravet, T., & Wilson, R. (2016). Trapped Cash and the Profitability of Foreign Acquisitions. *Contemporary Accounting Research*, *33*(1), 44–77.

Eiler, L., & Kutcher, L. A. (2014). Disclosure Decisions Surrounding Permanently Reinvested Foreign Earnings. *The Journal of the American Taxation Association*, *36*(2), 101–116.

Epstein, B. J., & Macy, L. G. (2011). The Differential Influence of U.S. GAAP and IFRS on Corporations' Decisions to Repatriate Earnings of Foreign Subsidiaries. *International Tax Journal*, *37*(2), 25–51.

Ettredge, M. L., Sun, L., Lee, P., & Anandarajan, A. A. (2008). Is Earnings Fraud Associated with High Deferred Tax and/or Book Minus Tax Levels? *Auditing: A Journal of Practice & Theory*, *27*(1), 1–33.

Frank, M. M., Lynch, L. J., & Rego, S. O. (2009). Tax Reporting Aggressiveness and Its Relation to Aggressive Financial Reporting. *The Accounting Review*, *84*(2), 467–496.

Frank, M. M., & Rego, S. O. (2006). Do Managers Use the Valuation Allowance Account to Manage Earnings around Certain Earnings Targets? *The Journal of the American Taxation Association*, *28*(1), 43–65.

Frey, L., & Möller, M. (2015). Der Zusammenhang zwischen „book-tax differences“ und Bilanzpolitik zum Erreichen eines positiven Jahresergebnisses [The association between book-tax differences and earnings management to avoid losses]. *Die Unternehmung - Swiss Journal of Business Research and Practice*, *69*(4), 467–500.

Frischmann, P. J., Shevlin, T., & Wilson, R. (2008). Economic consequences of increasing the conformity in accounting for uncertain tax benefits. *Journal of Accounting and Economics*, *46*(2-3), 261–278.

Graham, J. R., Hanlon, M., & Shevlin, T. (2011). Real Effects of Accounting Rules: Evidence from Multinational Firms' Investment Location and Profit Repatriation Decisions. *Journal of Accounting Research*, *49*(1), 137–185.

Graham, J. R., Raedy, J. S., & Shackelford, D. A. (2012). Research in accounting for income taxes. *Journal of Accounting and Economics*, *53*(1-2), 412–434.

Greenwald, M., Jimenez-Angueira, C. E., Nwaeze, E., & Park, S.-J. (2015). The Effect of Conservative Financial Reporting and Tax Aggressiveness on the Market Valuation of UTBs. *Working Paper.*

Gupta, S., Laux, R. C., & Lynch, D. P. (2015). Do Firms Use Tax Reserves to Meet Analysts' Forecasts? Evidence from the Pre- and Post-FIN 48 Periods. *Contemporary Accounting Research*, forthcoming.

Gupta, S., Mills, L. F., & Towery, E. M. (2014). The Effect of Mandatory Financial Statement Disclosures of Tax Uncertainty on Tax Reporting and Collections: The Case of FIN 48 and Multistate Tax Avoidance. *The Journal of the American Taxation Association*, *36*(2), 203–229.

Hail, L., Leuz, C., & Wysocki, P. (2010). Global Accounting Convergence and the Potential Adoption of IFRS by the U.S. (Part II): Political Factors and Future Scenarios for U.S. Accounting Standards. *Accounting Horizons*, *24*(4), 567–588.

Hanlon, M. (2005). The Persistence and Pricing of Earnings, Accruals, and Cash Flows When Firms Have Large Book-Tax Differences. *The Accounting Review*, *80*(1), 137–166.

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, *50*(2-3), 127–178.

Hanlon, M., Krishnan, G. V., & Mills, L. F. (2012). Audit Fees and Book-Tax Differences. *The Journal of the American Taxation Association*, *34*(1), 55–86.

Heiman-Hoffman, V. B., & Patton, J. M. (1994). An Experimental Investigation of Deferred Tax Asset Judgments under SFAS 109. *Accounting Horizons*, *8*(1), 1–7.

Heltzer, W. (2009). Conservatism and Book-Tax Differences. *Journal of Accounting, Auditing & Finance*, *24*(3), 469–504.

IASB. (2003). IFRS - IASB April 2003. Retrieved from http://www.ifrs.org/Current-Projects/IASB-Projects/Income-Taxes/Meeting-Summaries-and-Observer-Notes/Pages/IASB-April-2003.aspx

IASB. (2009). Exposure draft, Income tax: Comments to be received by 31 July 2009. London: IASC Foundation Publications Dept.

IFRIC. (2015). Draft IFRIC Interpretation DI/2015/1 Uncertainty over Income Tax Treatments 21 October 2015. Retrieved from http://www.ifrs.org/Current-Projects/IASB-Projects/IAS-12-Measurement-income-tax-uncertain-tax-position/Pages/Home.aspx

Jung, D.-J., & Pulliam, D. (2006). Predictive Ability of the Valuation Allowance for Deferred Tax Assets. *Academy of Accounting and Financial Studies Journal*, *10*(2), 49–70.

Koester, A. (2011). Investor Valuation of Tax Avoidance Through Uncertain Tax Positions. *SSRN Electronic Journal*.

Koester, A., Lim, S. C., & Vigeland, R. L. (2015). The Effect of Tax-Related Material Weakness in Internal Controls on the Market Valuation of Unrecognized Tax Benefits. *The Journal of the American Taxation Association*, *37*(1), 129–155.

Krull, L. K. (2004). Permanently Reinvested Foreign Earnings, Taxes, and Earnings Management. *The Accounting Review*, *79*(3), 745–767.

Kumar, K. R., & Visvanathan, G. (2003). The Information Content of the Deferred Tax Valuation Allowance. *The Accounting Review*, *78*(2), 471–490.

Lennox, C., Lisowsky, P., & Pittman, J. (2013). Tax Aggressiveness and Accounting Fraud. *Journal of Accounting Research*, *51*(4), 739–778.

Lev, B., & Nissim, D. (2004). Taxable Income, Future Earnings, and Equity Values. *The Accounting Review*, *79*(4), 1039–1074.

Lisowsky, P. (2010). Seeking Shelter: Empirically Modeling Tax Shelters Using Financial Statement Information. *The Accounting Review*, *85*(5), 1693–1720.

Lisowsky, P., Robinson, L. A., & Schmidt, A. P. (2013). Do Publicly Disclosed Tax Reserves Tell Us About Privately Disclosed Tax Shelter Activity? *Journal of Accounting Research*, *51*(3), 583–629.

Manzon, G. B., & Plesko, G. A. (2002). The Relation Between Financial and Tax Reporting Measures of Income. *Tax Law Review*, *55*, 175–214.

Markle, K. (2016). A Comparison of the Tax-Motivated Income Shifting of Multinationals in Territorial and Worldwide Countries. *Contemporary Accounting Research*, *33*(1), 7–43.

Meyer, M., Loitz, R., Linder, R., & Zerwas, P. (2010). Latente Steuern: Bewertung, Bilanzierung, Beratung [Deferred Taxes: Valuation, Accounting, Advisory] (2nd ed.). Wiesbaden: Gabler.

Miller, G. S., & Skinner, D. J. (1998). Determinants of the Valuation Allowance for Deferred Tax Assets under SFAS No. 109. *The Accounting Review*, *73*(2), 213–233.

Mills, L. F. (1998). Book-Tax Differences and Internal Revenue Service Adjustments. *Journal of Accounting Research*, *36*(2), 343–356.

Mills, L. F., & Newberry, K. J. (2001). The Influence of Tax and Nontax Costs on Book - Tax Reporting Differences: Public and Private Firms. *The Journal of the American Taxation Association*, *23*(1), 1–19.

Morrow, M., & Ricketts, R. C. (2014). Financial Reporting versus Tax Incentives and Repatriation under the 2004 Tax Holiday. *Journal of the American Taxation Association*, *36*(1), 63–87.

Nesbitt, W. L. N. (2014). Unrecognized Tax Benefits: Disentangling the Effects of Tax Aggressiveness and Financial Reporting Discretion, Dissertation, University of Georgia, Athens.

OECD. (2013). Addressing base erosion and profit shifting. Paris: OECD Publishing.

Oler, M., Shevlin, T., & Wilson, R. (2007). Examining Investor Expectations Concerning Tax Savings on the Repatriations of Foreign Earnings under the American Jobs Creation Act of 2004. *Journal of the American Taxation Association*, *29*(2), 25–55.

Pacter, P. (2014). Global Accounting Standards–From Vision to Reality. *CPA Journal*, *84*(1), 6–10.

Phillips, J., Pincus, M., & Rego, S. O. (2003). Earnings Management: New Evidence Based on Deferred Tax Expense. *The Accounting Review*, *78*(2), 491–521.

Phillips, J. D., Pincus, M., Rego, S. O., & Wan, H. (2004). Decomposing Changes in Deferred Tax Assets and Liabilities to Isolate Earnings Management Activities. *The Journal of the American Taxation Association*, *26*(Supplement), 43–66.

Plesko, G. A. (2004). Corporate Tax Avoidance and the Properties of Corporate Earnings. *National Tax Journal*, *57*(3), 729–737.

Pratt, J. (2011). Financial accounting in an economic context (8th ed.). Hoboken, NJ: Wiley.

PwC (2013a). Guide to Accounting for Income Taxes. Retrieved from http://www.pwc.com/us/en/cfodirect/assets/pdf/accounting-guides/pwc-income-taxes-second-edition-2015-2.pdf

PwC. (2013b). Tax Accounting Services - Income tax disclosure. Retrieved from https://www.pwc.com/us/en/tax-accounting-services/assets/tax-accounting-services-income-tax-disclosure.pdf

Raedy, J. S., Seidman, J. K., & Shackelford, D. A. (2011). Is There Information Content in the Tax Footnote? *SSRN Electronic Journal*.

Revsine, L., Collins, D. W., Johnson, W. B., & Mittelstaedt, H. F. (2012). Financial reporting & analysis (5th ed.). New York: McGraw-Hill/Irwin.

Robinson, L., Stomberg, B., & Towery, E. M. (2015). One size does not fit all: How the uniform rules of FIN 48 affect the relevance of income tax accounting. *The Accounting Review*, forthcoming.

Robinson, L. A., & Schmidt, A. P. (2013). Firm and Investor Responses to Uncertain Tax Benefit Disclosure Requirements. *The Journal of the American Taxation Association*, *35*(2), 85–120.

Schrand, C. M., & Wong, M. H. F. (2003). Earnings Management Using the Valuation Allowance for Deferred Tax Assets under SFAS No. 109. *Contemporary Accounting Research*, *20*(3), 579–611.

SEC. (2011). Work Plan for the Consideration of Incorporating International Financial Reporting Standards into the Financial Reporting System for U.S. Issuers: A Comparison of U.S. GAAP and IFRS. Retrieved from https://www.sec.gov/spotlight/globalaccountingstandards.shtml

Seidman, J. K. (2010). Interpreting the Book-Tax Income Gap as Earnings Management or Tax Sheltering. *SSRN Electronic Journal*.

Shackelford, D. A., & Shevlin, T. (2001). Empirical tax research in accounting. *Journal of Accounting and Economics*, *31*(1-3), 321–387.

Song, W.-L., & Tucker, A. L. (2008). Corporate Tax Reserves, Firm Value, and Leverage. *SSRN Electronic Journal*.

Striegel, A. (2013). Grundlagen des US-amerikanischen Steuerrechts: Mit Schaubildern und rund 170 Beispielen [Principles of the US tax system: with charts and about 170 examples] (2nd ed.). Berlin: Schmidt.

Tang, T. Y. (2015). Does Book-Tax Conformity Deter Opportunistic Book and Tax Reporting?: An International Analysis. *European Accounting Review*, *24*(3), 441–469.

Tang, T. Y., & Firth, M. (2011). Can book-tax differences capture earnings management and tax Management? Empirical evidence from China. *The International Journal of Accounting*, *46*(2), 175–204.

Visvanathan, G. (1998). Deferred tax valuation allowances and earnings management. *Journal of Financial Statement Analysis*, *3*(4), 6.

Waegenaere, A. de, Sansing, R., & Wielhouwer, J. L. (2015). Financial Accounting Effects of Tax Aggressiveness: Contracting and Measurement. *Contemporary Accounting Research*, *32*(1), 223–242.

Waegenaere, A. de, & Sansing, R. C. (2008). Taxation of International Investment and Accounting Valuation. *Contemporary Accounting Research*, *25*(4), 1045–1066.

Watts, R. L. (2003). Conservatism in Accounting Part II: Evidence and Research Opportunities. *Accounting Horizons*, *17*(4), 287–301.

Wilson, R. J. (2009). An Examination of Corporate Tax Shelter Participants. *The Accounting Review*, *84*(3), 969–999.

Table 1: Example of differences in measurement approaches

	Tax treatment	Individual probability of approval by tax authorities	Probability weighted calculation	Cumulative individual probability	Uncertain tax position to be recognized
	1,000	5%	50	5%	0
	750	15%	112.50	20%	250
Cumulative probability approach (U.S. GAAP)	500	35%	175	55%	**500**
Most likely amount (IFRS)	300	40%	120	95%	**700**
	0	5%	0	100%	1,000
Expected value (IFRS)			457.50		**542.50**

Appendix

Author(s)	Topic	Research Question	Sample	Findings
Albring et al. (2011)	Permanently Reinvested Foreign Earnings	Do U.S. multinationals' private and public debt constraints influence their responses to a temporary reduction in repatriation taxes by tax holidays?	Sample identified by Albring, Dzuranin, and Mills (2005)	Firms which repatriate more of their eligible funds have fewer financial covenants in their private debt contracts and greater access to public debt markets.
Amir et al. (1997)	Valuation Allowance	Do deferred tax components disclosed under SFAS No. 109 contain value relevant information?	Fortune 500 firms (1992-1994)	Net deferred tax components are incrementally useful to explain cross-sectional variation in firms' market value of equity. However, valuation allowances are not found to be value relevant.
Amir and Sougiannis (1999)	Valuation Allowance	Do financial analysts and equity investors incorporate information on deferred taxes from tax carryforwards into earnings forecasts and share prices?	Fortune 500 firms (1992-1994)	Analysts are found to perceive earnings to be less persistent in firms with carryforwards and are less precise and more optimistic when forecasting these companies' earnings. Investors attach a positive value to deferred taxes from carryforwards in the firms' equity valuation. Abnormal earnings and book values of equity are less valued in firms with carryforwards; these are even less valued in firms with valuation allowances.

Author(s)	Topic	Research Question	Sample	Findings
Atwood et al. (2012)	Book-Tax Differences	Do tax system characteristics—i.e. required book-tax conformity, worldwide versus territorial approach, and perceived strength of enforcement—impact corporate tax avoidance across countries after controlling for firm-specific and cross-country factors?	Firms available in COMPUSTAT from 22 countries (1993-2007)	Tax avoidance is lower for companies in home countries which have a higher level of book-tax conformity, follow a worldwide rather than a territorial approach, and have a stronger perceived tax enforcement system.
Ayers (1998)	Valuation Allowance	Do net deferred tax liabilities disclosed under SFAS No. 109 provide additional value-relevant information over and above the disclosure required by APB No. 11?	Firms available in COMPUSTAT (1993)	The separate recognition of deferred tax assets, the creation of valuation allowances, and the adjustment of deferred tax accounts for enacted tax rate changes under SFAS No. 109 provide information on a firm's market value of equity.
Ayers et al. (2010)	Book-Tax Differences	Are changes in book-tax differences associated with credit rating changes?	U.S. firms available in COMPUSTAT and the Center for Research in Security Prices stock return files (1994-2004)	Large positive and negative book-tax differences are negatively associated with credit rating changes consistent with large changes in book-tax differences, which signal decreased earnings quality.

Author(s)	Topic	Research Question	Sample	Findings
Ayers et al. (2015)	Permanently Reinvested Foreign Earnings	Do firms that comply with mandatory disclosure requirements disclose information on permanently reinvested earnings and unrecorded deferred tax liabilities? Which factors are associated with non-disclosure?	S&P 500 firms (1999-2010)	With increasing amounts of estimated permanently reinvested earnings, disclosures of permanently reinvested earnings and unrecorded deferred tax liabilities decrease. Firms with more leverage, a greater percentage of foreign income, more geographic segments, and greater absolute discretionary accruals (greater size, greater institutional ownership, and lower profitability) are less likely to comply with disclosure requirements on permanently reinvested earnings (unrecorded deferred tax liabilities).
Bauman and Bauman (2002)	Valuation Allowance	Is there an asymmetry in evidence provision for recording valuation allowances and are stock returns associated with earnings resulting from valuation allowance changes?	Firms included in Disclosure Database (1993-1995)	Only negative past events can significantly explain a portion of valuation allowance increases. Stock returns are positively associated with earnings effects of valuation allowance changes, but are unrelated either to discretionary or to non-discretionary valuation allowance changes.
Bauman et al. (2001)	Valuation Allowance	Do firms use the deferred tax asset valuation allowance to manage earnings?	Fortune 500 firms (1995-1997)	Valuation allowance changes are reported most adequately in the effective tax rate reconciliation. There are only weak indications that companies mitigate differences between reported earnings and analysts' forecasts. There is no evidence of loss avoidance, earnings decreases, and the invoking of a 'big bath'.

Author(s)	Topic	Research Question	Sample	Findings
Bauman and Das (2004)	Valuation Allowance	To what extent do stock market participants incorporate expectations of future profitability in assessing the market value of internet firms?	Internet firms listed in the Internet Stock List as of December 31, 1999 (1999)	Share prices of internet firms are positively associated with unreserved deferred tax assets by valuation allowances which stand for future profitability. The greater the unreserved deferred tax assets, the more often deferred tax assets are positively valued.
Bauman and Shaw (2008)	Permanently Reinvested Foreign Earnings	Can disclosed or estimated repatriation tax liabilities better explain firm value?	S&P 500 firms with disclosed untaxed foreign earnings (2000-2004)	The impact of an expected repatriation tax on firm value is higher for firms that disclose an amount than for firms for which an amount is estimated.
Behn et al. (1998)	Valuation Allowance	Are there associations between the recognized deferred tax asset valuation allowance and certain variables put forth as sources of evidence in SFAS No. 109?	NYSE or AMEX listed firms with deferred tax assets (1993)	Evidence reveals that taxable income in prior years, the future reversals of temporary differences, the origin of the temporary differences, the other post-employment benefits temporary difference, the potential for future income, the tax planning strategies, and partly the firm's current financial situation are associated with cross-sectional differences in the percentage of deferred tax assets that are taken as an allowance.
Blaylock et al. (2015)	Book-Tax Differences	Are high levels of book-tax conformity associated with less earnings management?	All firm-year observations available in COMPUSTAT's Global Vantage files (1996-2007)	Using data from across the world, the results show that higher levels of book-tax conformity are associated with higher, not lower, overall levels of earnings management.

Author(s)	Topic	Research Question	Sample	Findings
Blaylock et al. (2012)	Book-Tax Differences	How is the incremental information given by temporary book-tax differences for the persistence of earnings and accruals linked with earnings management and tax avoidance?	Firms available in COMPUSTAT and CRSP (1993-2005)	Firms with large positive book-tax differences resulting from earnings management (tax avoidance) show lower (higher) earnings and accruals persistence than firms with book-tax differences that are not assumed to have arisen from earnings management (tax avoidance).
Blouin and Krull (2009)	Permanently Reinvested Foreign Earnings	Which characteristics do firms show which repatriate during the tax holiday and how do these firms use their repatriated funds?	Firms available in COMPUSTAT (2001-2005)	Repatriating firms have fewer investment opportunities shown by a low return on assets and market to book ratio, and a higher level of free cash flows. Repatriating firms engage significantly more often in share repurchases during the tax holiday than non-repatriating firms.
Blouin et al. (2012)	Permanently Reinvested Foreign Earnings	How do repatriation amounts vary across firms that face relatively strong reporting incentives to defer an accounting expense?	Confidential dataset from the Survey of U.S. Direct Investment Abroad (1999-2004)	Repatriation by public firms is more sensitive to the repatriation tax rate compared that by private firms. Firms with higher reporting incentives proxied by more intense capital market scrutiny and companies that make extensive use of permanently reinvestment designations repatriate less per year depending on repatriation tax rates.

Author(s)	Topic	Research Question	Sample	Findings
Bryant-Kutcher et al. (2008)	Permanently Reinvested Foreign Earnings	How do tax rules interact with foreign investments to affect the value of U.S. multinational corporations' permanently reinvested earnings?	Sample firms identified by Collins et al. (2001) (1994-1996)	Firms show a lower market value of equity when they report a positive repatriation tax and have high levels of excess cash.
Burgstahler et al. (2002)	Valuation Allowance	Do firms use discretion in accounting for deferred taxes to increase earnings and avoid reporting a loss?	Firms available in COMPUSTAT Annual Industrial File (1993-1998)	Firms which show small profits in order to avoid losses according to Burgstahler and Dichev (1997) decrease their valuation allowances significantly more than firms with small losses, even though there are no indications for higher expectations of future taxable income.
Cazier et al. (2015)	Unrecognized Tax Benefits	Did the regulatory changes due to the Sarbanes-Oxley Act and FIN 48 reduce the propensity for earnings management through the income tax reserve?	Firms available in COMPUSTAT (1997-2011)	Neither the Sarbanes-Oxley Act nor FIN 48 reduced earnings management through uncertain tax benefits. Income tax reserves are still used to beat the consensus analyst forecast.
Chao et al. (2004)	Valuation Allowance	Is managerial discretion over the valuation allowance used for earnings management purposes?	Firms included in the Compact Disclosure database showing deferred tax assets at least in one year (1996-2000)	Firms with declined and negative earnings are more likely to manage earnings downward by increasing the valuation allowance against deferred tax assets.

Author(s)	Topic	Research Question	Sample	Findings
Chi et al. (2014)	Book-Tax Differences	Does the book-tax difference contain useful information about future earnings growth that is mispriced by investors?	U.S. firms available in the monthly CRSP stock returns file from the NYSE and NASDAQ with data from COMPUSTAT and Thomson Financial (1988-2009)	The tax-income-to-book-income ratio and especially its temporary components are able to predict future earnings growth and future abnormal returns. Short sellers and firm insiders gain from capital markets' misinterpretation and mispricing of the information given by book-tax differences.
Christensen et al. (2008)	Valuation Allowance	Do firms create a large valuation allowance as a reserve to manage earnings in subsequent periods via reversals of the valuation allowance?	All companies available in COMPUSTAT (1996-1998)	Instead of using valuation allowances to manage earnings in subsequent periods, their establishment is a reflection of private information about firms' future profitability. Results show only a few firms using valuation allowances to meet or beat mean analyst forecasts.
Ciconte et al. (2014)	Unrecognized Tax Benefits	To what extent do unrecognized tax benefits provide information about the realizability of future income tax cash outflows?	Firms available in COMPUSTAT (2007-2012)	Results show a significant and positive one-to-one relationship between unrecognized tax benefits and future income tax cash outflows, indicating that uncertain tax benefits are not systematically under- or overstated.
Collins et al. (2001)	Permanently Reinvested Foreign Earnings	How does the disclosure of unrecognized deferred tax liabilities for unrepatriated foreign earnings generated in low-tax jurisdictions impact on stock prices?	Firms identified by a keyword search in NAARS database (1993)	Firms which disclose an estimated amount of unrecognized deferred tax liabilities for unrepatriated foreign earnings show lower stock prices than companies reporting no unrecognized deferred tax liabilities for permanently reinvested foreign earnings.

Author(s)	Topic	Research Question	Sample	Findings
Comprix et al. (2011)	Book-Tax Differences	Is there an association between measures of book-tax differences and measures of market participants' uncertainty?	Firms available in COMPUSTAT (1991-2008)	Total, temporary, and especially permanent book-tax differences are positively associated with market uncertainty measured by (1) share turnover, (2) analyst forecast dispersion, and (3) stock return variance.
Crabtree and Maher (2009)	Book-Tax Differences	Is there a relationship between the information provided by tax fundamentals—deferred taxes and ratio of tax-to-book income—and the perceived risk of default?	New corporate bond issues by Moody's bond rating agency (1994-2004)	Results show a negative U-shaped relationship between the tax fundamentals—deferred taxes and ratio of tax-to-book income—and bond ratings for those firms that fall into the extreme upper or lower industry-year quintiles for deferred taxes or for the tax-to-book ratio.
De Simone et al. (2014)	Unrecognized Tax Benefits	To what extent does management discretion affect the reserve for unrecognized tax benefits?	19 public companies that disclosed receipt of alternative fuel mixture credit refunds in their SEC filings (2009)	When the payment of the refund is received as a credit and the firm's corporate governance structure is weak, refunds are more often excluded from taxable income in the financial statement reporting and no full uncertain tax benefit reserve is established.
Desai and Dharmapala (2006)	Book-Tax Differences	Are there links between corporate tax avoidance and the growth of high-powered incentives for managers?	Firms available in COMPUSTAT with management data available in Execucomp (1993-2001)	Results show that increases in incentive compensation tend to reduce the level of tax sheltering, which is measured by the book-tax gap corrected by earnings management activity, for relatively poorly governed firms.

Author(s)	Topic	Research Question	Sample	Findings
Dhaliwal et al. (2013)	Valuation Allowance	Does management's decision regarding the recognition of the valuation allowance for deferred tax assets provide incremental information about the persistence of accounting losses?	Firms available in COMPUSTAT (1993-2008)	Loss firm-years with material increases in the valuation allowance are more persistent for one to three years ahead than loss firm-years with net operating losses or positive taxable income but no material increases in the valuation allowance.
Drake et al. (2015)	Unrecognized Tax Benefits	Do investors value tax avoidance and tax risk and is the valuation of tax avoidance moderated by tax risk?	Non-financial and non-utility firms (1992-2014)	Investors do positively value tax avoidance and value tax risks negatively. However, the valuation of tax avoidance by investors is dependent on tax risk meaning that an increase in tax avoidance is valued lower when tax risk increases.
Edwards et al. (2016)	Permanently Reinvested Foreign Earnings	Is there an effect of having excessive amounts of cash trapped abroad on the investment decision of U.S. multinational corporations?	U.S. public firms from the Securities Data Company's Mergers and Acquisitions database (1993-2012)	Multinational corporations with trapped cash have less profitable foreign acquisitions. The market reacts negatively to the acquisition announcement, surrounding the acquisition, and the acquisitions' long-run return. Further tests involving the AJCA tax holiday reveal that these negative associations are a result of U.S. tax law.

Author(s)	Topic	Research Question	Sample	Findings
Eiler and Kutcher (2014)	Permanently Reinvested Foreign Earnings	Which determinants are related to disclosure decisions on unrecognized deferred tax liabilities of permanently reinvested earnings?	Sample generated by text search in 10K-Wizard with key words 'indefinitely reinvested', 'permanently reinvested', and 'unremitted' (2000-2011)	The complexity of calculating estimated tax liability leads to decreased disclosure transparency. The size of the estimated amount results in higher disclosure transparency. Companies' overall disclosure environment and tax departments' sophistication and quality are not related to their disclosure transparency on unrecognized deferred tax liabilities of permanently reinvested earnings.
Ettredge et al. (2008)	Book-Tax Differences	Are tax data helpful in distinguishing firms engaging in fraud?	Firms available in COMPUSTAT (1992-2002)	Deferred tax expense is strongly associated with fraud occurrence but has only modest ability to predict future fraud cases. Book-tax differences are not significantly associated with fraud.
Frank et al. (2009)	Book-Tax Differences	Is there an association between aggressive tax and financial reporting?	All U.S. domiciled firm-year observations from COMPUSTAT's annual industrial file (1991-2005)	Results reveal a strong and positive relationship between financial and tax reporting aggressiveness, suggesting that insufficient costs and nonconformity exist which allow firms to manage book income upward and taxable income downward in the same reporting period.

Author(s)	Topic	Research Question	Sample	Findings
Frank and Rego (2006)	Valuation Allowance	Do managers use the valuation allowance account to manage earnings around certain earnings targets?	Publicly traded U.S. companies available in COMPUSTAT (1993-2002)	Firms use the valuation allowance to smooth earnings toward and cross over the mean analyst earnings target. Valuation allowances are used neither to smooth income around zero, nor to beat prior year's reported earnings, nor to build reserves by engaging in big bath behavior for any of the earnings targets.
Frey and Möller (2015)	Book-Tax Differences	Is there a relationship between book-tax differences and earnings management to avoid losses?	CDAX listed enterprises domiciled in Germany (2005-2014)	Book-tax differences are more related to earnings management to avoid losses than discretionary accruals. The information content of book-tax differences can primarily be ascribed to permanent differences instead of deferred tax expenses.
Frischmann et al. (2008)	Unrecognized Tax Benefits	How do investors perceive the costs and benefits associated with the adoption of FIN48?	S&P 500 firms available in CRSP daily returns and COMPUSTAT Annual Industrial files (2004-2007)	Results show no significant negative market reaction for firms around any of the key pronouncements leading to the adoption of FIN48. A positive association is found between abnormal returns and the amounts initially disclosed as unrecognized tax benefits that would impact the effective tax rate if recognized.

Author(s)	Topic	Research Question	Sample	Findings
Graham et al. (2011)	Permanently Reinvested Foreign Earnings	Is the ability to avoid the recording of income tax expense in U.S. GAAP financial statements an important factor in real corporate investment decisions regarding location of operations and repatriation and reinvestment of foreign earnings?	Survey from 595 tax executives (2007)	31% of respondents rated the deferral of the financial accounting tax expense as relevant to their decision to locate operations in foreign jurisdictions. 44% of respondents stated that financial accounting tax expense deferral is important in their decision of whether to reinvest foreign earnings abroad. The importance of the financial accounting tax expense deferral is shown not to be statistically different from the importance of deferring income tax payables.
Greenwald et al. (2015)	Unrecognized Tax Benefits	Do uncertain tax benefits provide investors with information about both firms' tax avoidance practices and their financial reporting conservatism?	Firms available in COMPUSTAT and CRSP (2007-2012)	Investors value uncertain tax benefits positively, as long as the firms in question do not aggressively avoid taxes. Conservative firms with uncertain tax benefits are not shown to have a higher market value of equity.
Gupta et al. (2015)	Unrecognized Tax Benefits	Do firms use tax reserves to meet analysts' quarterly earnings forecasts both pre and post FIN 48?	100 randomly selected firms from Fortune 500 (2003-2005 and 2007-2008)	Whereas in the pre-FIN 48 period firms are revealed to use changes in tax reserves to manage earnings in order to meet analysts' forecasts, in the post-FIN 48 period there is no evidence of comparable behavior.
Hanlon (2005)	Book-Tax Differences	Are book-tax differences indicative of the persistence of earnings, accruals, and cash flows for one-period-ahead earnings?	U.S. incorporated firms available in CRSP and COMPUSTAT (1994-2000)	Large positive book-tax differences are indicative of less persistent one-year-ahead earnings which also seem to be recognized by investors. Cash flow and accrual components of earnings are less persistent for next year's earnings if book-tax differences are large.

Author(s)	Topic	Research Question	Sample	Findings
Heiman-Hoffman and Patton (1994)	Valuation Allowance	Is there evidence to support the FASB's belief that there is no difference between the impairment approach and the affirmative approach?	Experiment at an Advanced In-Charge Accountants school of one of the Big 6 accounting firms with 84 participants	Consistent with the psychological phenomenon of anchoring and (insufficient) adjustment, the subjects' mean deferred tax asset estimate using the impairment approach is significantly higher than the subjects' mean deferred tax asset when the affirmative approach is used.
Jung and Pulliam (2006)	Valuation Allowance	Is the valuation allowance for deferred tax assets predictive of future income, or some other amount?	News releases of the valuation allowances available in LEXIS/NEXIS (1994-2002)	Valuation allowance changes are able to predict future income and future cash flows over an up to two-year horizon.
Koester et al. (2015)	Unrecognized Tax Benefits	How is the effect of tax-related material weakness in internal controls over financial reporting investors' valuation of unrecognized tax benefits?	Firms available in COMPUSTAT (2007-2012)	Investors positively value uncertain tax benefits, but the existence of a tax-related material weakness in internal controls completely attenuates the value relevance of unrecognized tax benefits.
Krull (2004)	Permanently Reinvested Foreign Earnings	Do firms use the permanently reinvested earnings designation to manage reported earnings, and do amounts reported as permanently reinvested reflect investment and tax incentives to reinvest foreign subsidiary earnings abroad?	U.S. domiciled firms available in COMPUSTAT (1993-1999)	Firms use the permanently reinvested foreign earnings designation to manage earnings for meeting analyst forecasts but not for declining or smoothing earnings. Reported permanently reinvested earnings are also related to investment opportunities, measured by after-tax return on assets, and tax incentives, measured by tax benefits.

Author(s)	Topic	Research Question	Sample	Findings
Kumar and Visvanathan (2003)	Valuation Allowance	Do disclosures of changes in deferred tax valuation allowances provide information beyond contemporaneous earnings reports?	News releases available in LEXIS/NEXIS including the keyword ‘valuation allowance’ (1994-1998)	News disclosures of quarterly valuation allowance changes are negatively associated with stock returns. This relationship is due to revised expectations about the realizability of deferred tax assets and future earnings available to realize deferred tax assets.
Lennox et al. (2013)	Book-Tax Differences	Do firms with aggressive financial reporting exhibit more or less tax aggressiveness?	797 fraud observations identified by Accounting and Auditing Enforcement Releases plus all available (non-fraud) firm-year observations in COMPUSTAT (1981-2001)	Results reveal that tax-aggressive U.S. public firms are less likely to fraudulently manipulate their financial statements, but only four (two) of five (three) effective tax rate (book-tax difference) measures as proxies for tax aggressiveness load positively (negatively).
Lev and Nissim (2004)	Book-Tax Differences	Are tax-based fundamentals able to predict earnings growth and stock returns?	U.S. based firms available in COMPUSTAT (1973-2000)	The ratio of tax-to-book income predicts both before and after the implementation of SFAS No. 109 earnings growth. Before SFAS No. 109 this information is related to abnormal stock returns; afterwards the information of this tax fundamental is negatively associated with the earnings-price ratio.

Author(s)	Topic	Research Question	Sample	Findings
Lisowsky (2010)	Book-Tax Differences; Unrecognized Tax Benefits	Can tax sheltering be predicted by specific firm characteristics by using data obtained by the Internal Revenue Service?	COMPUSTAT and Internal Revenue Service corporate tax return data (2000-2004)	Corporate tax shelter probability increases in the presence of corporate subsidiaries located in tax havens, foreign-source income, inconsistent book-tax treatment, litigation losses, use of promoters, profitability, and size, but decreases with higher leverage. The results also show a relationship with total book-tax differences and unrecognized tax benefits, but no association with discretionary permanent book-tax differences and long-run cash effective tax rates.
Lisowsky et al. (2013)	Unrecognized Tax Benefits	Are publicly disclosed tax reserves indicative of privately disclosed tax shelter activity?	Firms available from the intersection of IRS Large Business & International Division and COMPUSTAT (2006-2009)	The uncertain tax benefit tax reserve is shown to be a reliable proxy for privately disclosed tax shelter activity and is also a predictor of future tax shelter usage.
Morrow and Ricketts (2014)	Permanently Reinvested Foreign Earnings	To what extent is firm behavior under the tax holiday attributable to tax incentives, financial reporting incentives, or both?	U.S. firms available in COMPUSTAT Geographic Segment database (2002-2010)	The firms under review did not make use of the maximum available tax advantage and repatriated permanently reinvested earnings when their earnings exceeded analyst forecasts to smooth earnings. On the contrary, firms not meeting analyst forecasts repatriated non-permanently reinvested earnings with reduced tax rates to manage earnings upward.

Author(s)	Topic	Research Question	Sample	Findings
Mills (1998)	Book-Tax Differences	Can firms maximize financial reporting benefits and tax savings independently at no cost?	Confidential data from tax returns and tax audit results for both private and public manufacturing firms (1982-1992)	The number of Internal Revenue Service adjustments increase when book-tax differences increase.
Miller and Skinner (1998)	Valuation Allowance	Do managers set the valuation allowance in accordance with the provisions of SFAS No. 109?	Selected sample of 200 U.S. firms having large other post-employment benefit charges and high deferred tax assets (1992-1993)	Valuation allowances are larger for firms with relatively more deferred tax assets and smaller for firms with higher levels of expected future taxable income, whereby tax credits and tax loss carryforwards are important explanatory factors for the level of valuation allowances. Only little evidence is found for earnings management.
Mills and Newberry (2001)	Book-Tax Differences	Is there an effect of tax and nontax costs on aggregate book-tax reporting differences?	Manufacturing firms in the Coordinated Examination Program of the Internal Revenue Service (1981-1996)	Public firms report significantly higher book earnings relative to taxable income than private firms when they are in income positions and significantly larger book losses relative to tax losses when they are in loss positions.
Nesbitt (2014)	Unrecognized Tax Benefits	Can reported uncertain tax benefits be partitioned into a component that reflects a firm’s tax aggressiveness, and a component that captures the effects of financial reporting incentives?	U.S. domiciled firms available in COMPUSTAT (2006-2011)	Using a model for predicting the tax aggressive component of uncertain tax benefits, the residual is shown to reflect managers’ discretion since it is negatively associated with future tax expense but not associated with future taxes paid. The residual uncertain tax benefit is revealed to be greater for firms with tax-related internal control weaknesses and its reductions are used to meet analysts’ consensus earnings forecast.

Author(s)	Topic	Research Question	Sample	Findings
Oler et al. (2007)	Permanently Reinvested Foreign Earnings	Does the market capitalize into current stock prices the unrecognized deferred tax liability associated with permanently reinvested earnings generated in low-tax jurisdictions before and after the passage of the tax holiday was probable?	Sample identified by Albring et al. (2005)	Consistent with Collins et al. (2001), results show that prior to the time passage of the dividend deduction became probable, investors capitalized the unrecognized deferred tax liability into current stock prices. After the passage of the dividend deduction became probable, the market capitalized unrecognized deferred tax liabilities less into current stock prices.
Phillips et al. (2003)	Book-Tax Differences	Are deferred tax expenses as proxies for book-tax differences useful in detecting earnings management?	U.S. incorporated firms with earnings management incentives (1994-2000)	Deferred tax expense is incrementally useful beyond total and discretionary accruals to detect earnings management to avoid losses and earnings decreases.
Phillips et al. (2004)	Book-Tax Differences; Valuation Allowance	Do changes in annual earnings and changes in the components of deferred tax assets and liabilities reveal earnings management activities?	Randomly selected sample of U.S. incorporated firms (1994-2000)	Changes in the net deferred tax liability component related to revenue and expense accruals and reserves can be used to detect earnings management and avoid an earnings decline. There is no indication that valuation allowances are managed to avoid an earnings decline.
Raedy et al. (2011)	Book-Tax Differences	Are disaggregated book-tax differences detailed in the tax footnote associated with earnings persistence and growth, and stock returns?	Fortune 250 firms (1993-2007)	Smaller temporary differences related to revenue recognition, asset impairments, employee benefits, and mark-to-market accounting are related to high historical earnings persistence. However, the market does not price the differences associated with persistence differently from other book-tax differences.

Author(s)	Topic	Research Question	Sample	Findings
Robinson et al. (2015)	Unrecognized Tax Benefits	Are tax reserves predictive of future cash settlements and did FIN 48 change the relevance of income tax accounting?	Firms available in the Internal Revenue Service FIN 48 registry (2002-2011)	Tax reserves consistent with FIN 48 are shown to overstate future cash tax settlements. No difference is found in changes of tax expenses depending on whether resolutions of tax positions are settled with the Internal Revenue Service before or after FIN 48.
Robinson and Schmidt (2013)	Unrecognized Tax Benefits	Do proprietary costs affect disclosure quality? How do investors react to disclosure quality in a new proprietary cost setting?	S&P 1500 firms as of January 1, 2007 (2007)	Results show that firms facing higher proprietary costs show lower disclosure quality concerning FIN 48. Investors penalize high proprietary cost firms when they provide high quality disclosure consistent with FIN 48.
Schrand and Wong (2003)	Valuation Allowance	Do banks manage earnings by setting a high valuation allowance associated with deferred tax assets and adjusting the valuation allowance in subsequent periods?	Commercial banks available in the COMPUSTAT Bank Annual file having a December fiscal year-end (1993)	Banks tend to over-reserve valuation allowances in order to smooth earnings toward the consensus forecast and historical earnings per share.
Seidman (2010)	Book-Tax Differences	Is the book-tax gap a valid proxy for earnings management or tax sheltering? Can modifications improve its proxy?	U.S. firms available in COMPUSTAT (1993-2004)	GAAP changes explain 50.45% of the variation in the book-tax gap. The results concerning earnings persistence of Hanlon (2005) can be explained primarily by book-tax differences caused by earnings management. Total book-tax gap is a reasonable proxy for earnings management, but book-tax differences adjusted by GAAP changes are a better proxy for tax sheltering.

Author(s)	Topic	Research Question	Sample	Findings
Song and Tucker (2008)	Unrecognized Tax Benefits	Which firm-specific factors are correlated with the level of tax reserves, how do tax reserve levels influence firm value, and how do tax reserves interact with firm debt policy?	273 industrial calendar year companies of S&P 500 (2005-2007)	Greater size, higher profitability, higher growth rates, more selling and administrative expenses, more debt, more research and development expenses, and less collateral are firm characteristics which are related to greater tax reserves. Tax reserves are positively related to firm value. High profitable firms with above median amounts of tax reserves show significant leverage increases two years prior to the mandatory reporting of uncertain tax benefits consistent with FIN 48.
Tang (2015)	Book-Tax Differences	Does book-tax conformity restrain managers from opportunistically reporting financial profits and taxable income?	Consolidated statements available in COMPUSTAT of 32 countries (1994-2007)	High conformity is related to lower earnings management and tax avoidance even after controlling for firm characteristics and institutional factors. Conformity is captured by root-mean square errors of the regression of book-tax differences on discretionary accruals and tax avoidance.

Author(s)	Topic	Research Question	Sample	Findings
Visvanathan (1998)	Valuation Allowance	Does the relationship between changes in valuation allowance and changes in current income vary systematically with motives for earnings management such as debt covenants and incentives in bonus plans?	S&P 500 firms which were adopting SFAS No. 109 (1992-1994)	No direct associations are found between changes in valuation allowance and debt-to-equity ratios or bonus plan-based incentives. However, the results show that changes in valuation allowances are negatively related to changes in current profitability after controlling for changes in future profitability. Highly leveraged firms rely more on changes in current earnings in changing valuation allowances.
Waegenaere and Sansing (2008)	Permanently Reinvested Foreign Earnings	Are permanently reinvested earnings reported in the tax footnote value-relevant?	Formal analytical model with no underlying dataset	Firm valuation of the subsidiary is lower when the subsidiary's permanently reinvested earnings are reinvested in financial assets rather than operating assets. This occurs because a dollar of foreign earnings reinvested in financial assets is worth less due to the repatriation tax that will be incurred upon its repatriation and/or the opportunity cost associated with delaying that repatriation.
Waegenaere et al. (2015)	Unrecognized Tax Benefits	Why do managers focus on the financial accounting consequences instead of the cash flow consequences of tax-reporting decisions and do cash taxes paid or unrecognized tax benefits reflect differences in tax aggressiveness better across firms?	Formal analytical model with no underlying dataset	Within the boundaries of an optimal compensation contract, managers are incentivized to reduce cash taxes paid and not to set uncertain tax benefits above the amount necessary on the basis of all attainable information. Neither cash taxes paid nor uncertain tax benefits are helpful in distinguishing a conservative firm from an aggressive firm.

Author(s)	Topic	Research Question	Sample	Findings
Wilson (2009)	Book-Tax Differences	Can tax sheltering be predicted by specific firm characteristics? Does tax sheltering create wealth for shareholders?	59 U.S. firms accused for active tax sheltering plus a matched control sample	Firms engaging in tax sheltering show larger book-tax differences and show significantly higher abnormal returns when they have strong corporate governance structures.

Betriebswirtschaftliche Reihe der Passauer Diskussionspapiere

Bisher sind erschienen:

B-1-98 Jochen Wilhelm, A fresh view on the Ho-Lee model of the term structure from a stochastic discounting perspective

B-2-98 Bernhard Nietert und Jochen Wilhelm, Arbitrage, Pseudowahrscheinlichkeiten und Martingale - ein didaktisch einfacher Zugang zur elementaren Bewertungstheorie für Derivate

B-3-98 Bernhard Nietert, Dynamische Portfolio-Selektion unter Berücksichtigung von Kurssprüngen

B-4-99 Jochen Wilhelm, Option Prices with Stochastic Interest Rates – Black/Scholes and Ho/Lee unified

B-5-99 Anja Tuschke, Stock-based Incentive Schemes and the Managerial Labor Market

B-6-00 Jochen Wilhelm, Das Gaußsche Zinsstrukturmodell – Eine Analyse auf der Basis von Wahrscheinlichkeitsverteilungen

B-7-01 Bernhard Nietert und Jochen Wilhelm, Some Economic Remarks on Arbitrage Theory

B-8-01 Jochen Wilhelm, Option Prices with Stochastic Interest Rates – Black/Scholes and Ho/Lee unified

B-9-02 Jochen Wilhelm, Risikoabschläge, Risikozuschläge und Risikoprämien – Finanzierungstheoretische Anmerkungen zu einem Grundproblem der Unternehmensbewertung

B-10-03 Jochen Wilhelm, Unternehmensbewertung – Eine finanzmarkttheoretische Untersuchung

B-11-04 Bernhard Nietert und Jochen Wilhelm, Non-Negativity of Nominal and Real Riskless Rates, Arbitrage Theory, and the Null-Alternative Cash

B-12-06 Armin Dolzer und Bernhard Nietert – Portfolio selection with Time Constraints and a Rational Explanation of Insufficient Diversification and Excessive Trading

B-13-08 Josef Schosser - Bewertung ohne "Kapitalkosten": ein arbitragetheoretischer An satz zu Unternehmenswert, Kapitalstruktur und persönlicher Besteuerung

B-14-14 Mathias Eickholt, Oliver Entrop, Marco Wilkens, Individual Investors and Suboptimal Early Exercises in the Fixed-Income Market

B-15-14 Mathias Eickholt, Oliver Entrop, Marco Wilkens, What Makes Individual Investors Exercise Early? Empirical Evidence from the Fixed-Income Market

B-16-14 Mathias Eickholt, Behavioral Financial Engineering in the Fixed-Income Market: The Influence of the Coupon Structure

B-17-16 Caroline Baethge, Performance in the Beauty Contest: How Strategic Discussion Enhances Team Reasoning

B-18-16 Caroline Baethge, Marina Fiedler, Aligning Mission Preferences: Does Self-Selection Foster Performance in Working Groups?

B-19-16 Caroline Baethge, Marina Fiedler, All or (Almost) Nothing? The Influence of Information Cost and Training on Information Selection and the Quality of Decision-Making.

B-20-16 Caroline Baethge, Marina Fiedler, Ernan Haruvey, In It to Win It: Experimental Evidence on Unique Bid Auctions

B-21-16 Markus Grottke, Maximilian Kittl, First the stick, then the carrot? A cross-country evaluation of the OECD's initiative against harmful tax competition

B-22-16 Heike Diller, Stephen Jeffrey, Marina Fiedler, Searching for the silver linings of techno-invasion

B-23-16 Stephen Jeffrey, Heike Diller, Marina Fiedler, How does intensification and mobile rearrangement affect employee commitment

B-24-16 Heike Diller, Life is tough so you gotta be rough – How resilience impacts employees' attitude towards ICT use

B-25-16 Stephen Jeffrey, Heike Diller, Marina Fiedler, Closing the Strategy-Performance Gap: The Role of Communication Fit and Distraction

B-26-17 S. Baller, O. Entrop, A. Schober, M. Wilkens, What drives Performance in the Speculative Market of Short-Term Exchange-Traded Retail Products?

B-27-17 S. Baller, Risk Taking in the Market of Speculative Exchange-Traded Retail Products: Do Socio-Economic Factors matter?