Making Deferred Taxes Relevant

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ABSTRACT

We analyse the conceptual problems in current accounting for deferred taxes and provide solutions derived from the literature in order to make IFRS deferred tax numbers value relevant. In our view, the empirical results concerning the value relevance of deferred taxes should find their way into the accounting standard-setting process. We conclude that deferred taxes should only be recognised for temporary differences that will result in actual future tax payments and/or tax receipts. Temporary differences for which the tax cash flow has already occurred have valuation implications for the underlying asset or liability and should therefore be accounted for based on the valuation adjustment approach. Furthermore, we conclude that partial allocation should replace comprehensive allocation in order to better align deferred taxes with expected future cash flows and thus increase their relevance and understandability. Finally, we conclude that deferred tax balances should be measured on a discounted basis to address time value.

Keywords: IFRS, Deferred Taxes, Book-First, Tax-First

JEL classification: M41

1 Introduction

The International Accounting Standards Board (IASB) recently decided to keep International Accounting Standard 12 *Income taxes* (IAS 12) unchanged. At the same time, it also announced that it will halt any further research efforts into whether this standard should be (fundamentally) changed.[1] The IASB took this decision after reviewing the results of a research project aimed at better understanding the needs of users of financial statements. This project was identified as part of the 2011 Agenda Consultation, at a time when there was increased attention on IAS 12's shortcomings.[2] Criticism of IAS 12 is not new, since the comprehensive balance sheet model, which is the foundation for IAS 12 and deferred taxes, has been criticised for several decades. Thus, the concept of deferred taxes has led to a large body of literature that provides insights into the model's shortcomings from both an analytical and an empirical perspective (see also Graham et al., 2012). While, in their decision, the IASB did consider users' needs, looked into certain application issues, and considered research into tax disclosures, in our view, it has insufficiently considered the empirical academic results and insights from a measurement perspective. Empirical evidence, particularly from more recent research, indicates that the current comprehensive balance sheet approach of IAS 12 provides insufficient value-relevant information to investors, since there is only a weak relationship between deferred tax balances and future tax cash flows (e.g. see Laux, 2013). These and other results should in our view find their way into the accounting standard-setting process. Our paper systematically analyses the key shortcomings of IAS 12 by looking at its exemptions and inconsistencies with the current *Conceptual framework* and the *Exposure draft* for a new conceptual framework for financial reporting. It furthermore reviews the results from academic research and it identifies possible

[1] www.ifrs.org/Current-Projects/IASB-Projects/Income-Taxes/Pages/Income-taxes-research-project.aspx

[2] For instance, see a Discussion Paper prepared by the European Financial Reporting Advisory Group (EFRAG) and the UK Accounting Standards Board (ASB) that was published in 2011.

solutions based on these results. We arrive at these solutions by identifying the objectives and problems in IAS 12 based on our own analysis of the principles and exemptions included in the standard in Section 2. In Section 3, we examine whether deferred tax assets and liabilities based on IAS 12 meet the definitions of assets and liabilities as well as recognition and measurement criteria under the current *Conceptual framework* and the new *Exposure draft*, so as to determine whether the problems in IAS 12 are fundamental. In Section 4, we summarise the academic research into deferred tax assets and liabilities and IAS 12's shortcomings as well as potential solutions to address these. In particular, we look at the decision usefulness of interperiod income tax allocation, the value relevance of the balance sheet approach, the existence of a probability threshold for deferred tax assets but not for deferred tax liabilities, and the implications arising from time value. In Section 5, we look into solutions and potential alternative models such as the partial allocation method, the flow-through approach, the accruals approach and the valuation adjustment approach.

Based on our analysis, we conclude that in order to increase value relevance, the balance sheet approach should only be used for temporary differences that appear first in the financial statement and then in the tax return (Book-First). Only deferred taxes from Book-First temporary differences will result in tax payments and/or receipts in future periods. Temporary differences that appear first in the tax return and then in the financial statements (Tax-First) should be accounted for under the valuation adjustment approach. These temporary differences are a valuation adjustment to the underlying carrying amounts of assets and liabilities rather than representing future tax cash flows. Under the valuation adjustment approach, the carrying values of assets and liabilities are split into a portion that provides economic benefits to the entity (or

results in an outflow of benefits) and a portion that reflects the income tax benefits (or income tax charges). The carrying amount of the asset or liability is adjusted via a tax valuation adjustment accrual and deferred taxes are recognized to account for the future income tax payments and/or receipts. We also conclude that the partial allocation method should be re-introduced to better align deferred taxes with expected future cash flows and as a result increase their relevance and understandability. Partial allocation will also remove asymmetrical conservatism from the standard and will bring neutrality into it, since the same thresholds are being applied for deferred tax assets and deferred tax liabilities. We finally conclude that deferred tax balances should be measured on a discounted basis to address time value. Our analysis shows that this model would make deferred taxes more relevant than they are today. Given the outcome of our analysis, we recommend that the IASB reconsiders its decision to end the project on income taxes, since our results demonstrate that IAS 12's shortcomings can and should be overcome, sooner rather than later.

2 Objectives, principles and exemptions of IAS 12

In IAS 12, the IASB describes how entities reporting under International Financial Reporting Standards (IFRS) should account for income taxes in their financial statements. IAS 12's objective is *'to prescribe the accounting treatment for income taxes. The principal issue in accounting for income taxes is how to account for the current and future tax consequences of the future recovery (settlement) of the carrying amount of assets (liabilities) that are recognised in an entity's statement of financial position and transactions and other events of the current period that are recognised in an entity's financial statements*.' The standard has been designed to ensure that the income tax consequences following the recovery of assets or settlement of liabilities are

considered when preparing financial statements. In IAS 12, the current income tax consequences are included in the financial statements by recording the amounts that are (expected to be) submitted to the tax authorities in the income tax return. The future income tax consequences are included by comparing the carrying amounts of assets and liabilities for financial reporting with the corresponding tax bases as (or to be) included in the tax return. The differences between the carrying amount for book purposes and the tax base that will result in additional future income tax payments or tax receipts are described in IAS 12 as *taxable temporary differences* and *deductible temporary differences*. This approach, also referred to as the *balance sheet (liability) approach*, implies that the recovery of the carrying amount of assets and the settlement of liabilities will have future income tax consequences.

To account for future income tax consequences, entities should determine the expected manner of recovery of assets and/or expected settlement of liabilities. The expected manner of recovery (or settlement) is required to determine the corresponding tax base as well as the applicable (substantially) enacted tax rate in order to compute the deferred tax balances for temporary differences. When the (substantially) enacted tax rate changes, deferred tax balances must be updated in order to ensure that deferred tax balances reflect the value for which they are expected to be settled in the future. While this requirement is both applicable for deferred tax assets and deferred tax liabilities, it refers to the *liability* element included in the balance sheet liability approach. The balance sheet liability approach with separate recognition of deferred tax assets and deferred tax liabilities in IAS 12 is based on Financial Accounting Standard 109 *Accounting for income taxes* (FAS 109) its US GAAP equivalent. The introduction of these new principles with a change in focus from the income statement to the balance sheet was not without

controversy. The model was included for the first time in 1987 in Financial Accounting Standard 96 *Accounting for Income Taxes* (FAS 96), the standard that supposed to replace Accounting Principle Board 11 *Accounting for income taxes* (APB 11). The effective date of FAS 96 was however deferred three times as there were concerns about complexity and cost before it was ultimately replaced by FAS 109 (Camfferman and Zeff, 2007). Also IAS 12 has been and still is being criticised. A significant point of criticism is that the many exemptions in the standard indicate that the standard lacks a solid theoretical foundation.[3] IAS 12 prescribes the comprehensive approach, in which deferred taxes are, as a starting point, recognised for all temporary differences. However, the standard also has certain exemptions (or exceptions) for situations where deferred tax liabilities or deferred tax assets should not be recognised. In this section, we will analyse the key exemptions included in IAS 12 in order to understand their background and to evaluate their rationale. We discuss the goodwill, the initial recognition, and the outside basis exemptions.

Goodwill exemption

According to IAS 12 paragraph 15 (a), a deferred tax liability should not be recognised for the initial recognition of goodwill. The standard acknowledges that the difference between book goodwill and tax goodwill is a taxable temporary difference. However, the standard does not allow recognising a deferred tax liability, since this would create an additional taxable temporary difference since the deferred tax liability recognised increases the book goodwill while any tax goodwill remains the same. Although a deferred tax liability could be calculated through an iterative calculation, the IASB believes that this does not result in useful information. On the

[3] See also p.5 of the EFRAG and ASB Discussion Paper (2011): *"Some question the underlying principle of IAS 12 and point to the many exceptions to the principle as evidence the standard is in some way fundamentally flawed"*.

other hand, paragraph IAS 12.24, which sets out the requirements for deferred tax assets, does not include such an exemption in case there is a deductible temporary difference in relation to goodwill. In such a situation, preparers are required to use an iterative calculation in order to determine the deferred tax asset and final goodwill number for book purposes. The exemption in IAS 12 therefore exists for deferred tax liabilities even though there are no theoretical arguments against recognising and despite the standard requiring recognition of deferred tax assets. IAS 12 also requires the recognition of deferred tax liabilities for taxable temporary differences in relation to goodwill that arise after the initial recognition of goodwill. We illustrate the implications of this exemption in IAS 12 in example 1.

Example 1: The case of the deferred tax liability goodwill exemption

Entity A acquires all shares of entity X and recognises a goodwill amount of 1,000 that is not tax-deductible. As a result, at initial recognition, a taxable difference of 1,000 arises. Entity B acquires all shares of entity Y and recognises a goodwill amount of 1,000 that is tax-deductible and therefore no temporary difference arise at the initial recognition. Entity B amortises goodwill for tax purposes over a 10-year period. Both entities have earnings before income tax and the abovementioned transaction of 1,000 in each of the years presented. A tax rate of 25% applies in each of the years.

	Entity A			Entity B		
Year	**Goodwill**	**DTL**	**Net result**	**Goodwill**	**DTL**	**Net result**
0	1,000	-	-	1,000	-	-
1	1,000	-	750	1,000	(25)	750
2	1,000	-	750	1,000	(50)	750
3	1,000	-	750	1,000	(75)	750
4	1,000	-	750	1,000	(100)	750
5	1,000	-	750	1,000	(125)	750
6	1,000	-	750	1,000	(150)	750
7	1,000	-	750	1,000	(175)	750
8	1,000	-	750	1,000	(200)	750
9	1,000	-	750	1,000	(225)	750
10	1,000	-	750	1,000	(250)	750

No deferred tax liability is recognized by Entity A for the taxable temporary difference at the initial recognition of goodwill in accordance with IAS 12 paragraph 15 (a). Entity B has no temporary difference at the initial recognition of goodwill, but adds an amount to a deferred tax liability of 25 each year (100*25%= 25) for the temporary difference that arises as a result of the annual goodwill tax amortization of 100 (1,000/10 years). The net income of Entity A is 1,000 minus current tax of 250 (1,000*25%) which equals 750. Entity B has the same net income but it is calculated as follows: 1,000 minus current tax (1,000-100)*25% of 225 minus deferred tax of 25 equals 750.

Example 1 shows that, at the beginning of year 1, the balance sheet of entity A and entity B are similar, even though their economic position is not similar, since entity B has goodwill tax amortisation benefits that entity A does not have. The economic value of the goodwill of entity A completely relates to expected economic benefits such as synergies, while for entity B, this is only the case for 846, since 154 relates to the discounted tax amortisation benefit[4]. Thus, the economic substance of the goodwill is different, although the amounts are the same. Under IAS 12, entity A and entity B present the same net result in each of the years 1 to 10, even though entity B realises the goodwill amortisation for tax purposes and reduces its tax payments in each of those years. At the end of year 10, both entities have IFRS goodwill of 1,000 that is not deductible (anymore) for tax purposes and thus have the same economic position, but entity B has recognised a deferred tax liability and entity A has not. This balance sheet position difference is remarkable and cannot be justified from a theoretical perspective. Thus, we conclude that the goodwill exemption not only lacks a theoretical foundation, but also results in financial positions that do not represent economic reality.

[4] The discounted tax amortisation benefit is calculated by discounting the tax amortization of 1,000/10 years * 25%= 25 for the years 1 to 10 through the following calculation: $25*(1-(1+10\%)^{-10})/10\% = 154$.

Initial recognition exemption

IAS 12 paragraph 15 (b) requires that a deferred tax liability is not recognised on the initial recognition of an asset or liability that is not part of a business combination and, at the time of recognising the asset, does not affect accounting or tax profit. A similar requirement is included in paragraph IAS 12.24 for deferred tax assets. These paragraphs in IAS 12 are an exemption from the comprehensive principles of the standard and are also described as the *initial recognition exemption*. The paragraphs deviate from the general rule of recognising deferred tax for all temporary differences based on its origination and was introduced because the IASB felt that adjusting the carrying amount of the asset and liability would leave the '*financial statements less transparent'*. Since alternative options such as recognition directly through equity or via the income statement were also not considered appropriate, because the temporary difference does not stem from transactions in equity or the income statement, the IASB decided to exempt the recognition of deferred taxes on such temporary differences. The option to adjust the carrying value of the assets or liability, the required method under U.S. GAAP, can be supported from the valuation perspective, since the fair value of a depreciable asset typically includes the tax consequences from the tax amortisation benefit. However, IAS12 does not allow recognition although entities are required to increase or reduce the amount of goodwill as a result of the deferred tax on temporary differences created as a result of the business combination. Given that the distinction between the acquisition of assets and the acquisition of a business is not always easy to make (as also indicated in the *Report and feedback statement from post-implementation review of IFRS 3 business combinations*, IASB, 2015) and can depend on a transaction's details, relatively small differences from an economic perspective or in a judgment made by the

acquiring entity can significantly affect the accounting for the income tax consequences arising from the transaction. We illustrate the implications of this exemption in IAS 12 in example 2.

Example 2: The case of the initial recognition exemption for deferred tax liabilities

Entity A acquires all shares of entity X for 850 and recognises tangible assets (property, plant and equipment) as part of the purchase price allocation. The fair value of the tangible assets, or the price paid in a taxable transaction (including tax amortisation benefits), amount to 1,000. The value of entity X's tangible assets for tax purposes is nil, in line with the book value of the previous owner. It is concluded that entity X is a business; therefore, goodwill is recognised for the difference between the purchase consideration paid and the identifiable assets and liabilities. Entity B acquires all shares of entity Y for 850 and acquires similar tangible assets with a fair value of 1,000 (see A). A discount of 150 on the purchase price was agreed between entity B and the seller to structure the transaction as a non-taxable share sale instead of a taxable asset sale. The value of entity Y's tangible and intangible assets for tax purposes is nil. Since it is concluded that entity Y is not a business, no goodwill is recognised. The management of both entities will realise the full value of the asset through use and both entities have earnings before income tax and the abovementioned transaction of 1,000 in each of the years presented. The acquired tangible assets are depreciated over a 10-year period and a tax rate of 25% applies in each of the years.

	Entity A				Entity B			
Year	**PP&E**	**Goodwill**	**DTL**	**Net result**	**PP&E**	**DTL**	**Goodwill**	**Net result**
0	1,000	100	250		850	-	-	
1	900	100	225	675	765		-	665
2	800	100	200	675	680	-	-	665
3	700	100	175	675	595	-	-	665
4	600	100	150	675	510	-	-	665
5	500	100	125	675	425	-	-	665
6	400	100	100	675	340	-	-	665
7	300	100	75	675	255	-	-	665
8	200	100	50	675	170	-	-	665
9	100	100	25	675	85	-	-	665
10	-	100	-	675	0	-	-	665

Entity A recognizes a deferred tax liability of 250 (1,000*25%) for the taxable temporary difference on PP&E as part of the purchase price allocation. No deferred tax liability is recognized on the initial recognition of goodwill and

therefore goodwill of 100 (850-1,000+250) is recognized on the balance sheet. Entity B does not recognize a deferred tax liability as the acquisition of the assets of Y does not qualify as a business combination and also does not affect accounting or tax profit. The net income of Entity A is calculated as follows: income 1,000 minus depreciation of 100 (1,000/10 years) minus current tax 250 (1,000*25%) plus deferred tax 25 (100*25%) equals 675. Net income of entity B is calculated as follows: income 1,000 minus depreciation of 85 (850/10 years) minus current tax 250 (1,000*25%) equals 665.

Example 2 shows that although both entities have recognised tangible assets that are not tax-deductible, only entity A recognised a deferred tax liability for this taxable temporary difference, since it concluded that the acquired entity qualifies as a business, while entity B did not recognise a deferred tax liability, since it concluded that the acquired entity does not qualify as a business. This results in a difference in net equity and net result in each of the years 1 to 10. These differences are largely resulting from the income tax accounting consequences, although the transactions' future tax consequences are similar. Thus, the initial recognition exemption cannot be justified from a theoretical perspective.

Outside basis exemption

For certain specific income tax situations, IAS 12 has created another exemption to the general comprehensive rule of recognising deferred taxes for all temporary differences. IAS 12.39 requires that deferred tax liabilities on subsidiaries, joint ventures and associates are not recognised if the investor is able to control the timing of the reversal of the taxable temporary difference through for instance the dividend policies and it is *probable* that this taxable temporary difference will not reverse in the foreseeable future. In IAS 12.40, the IASB explains that the recognition of deferred taxes is not warranted, because the parent entity is able to control the timing of the reversal. In addition, in the same paragraph, the IASB indicates that it is also

often impracticable to determine the income tax consequences. Although this argument is used for subsidiaries, the same argument does not apply for associates where IAS 12 paragraph 42 requires the recognition of deferred taxes up to at least the minimum amount in case the parent is not able to control the reversal of the temporary difference. This paragraph is another deviation from the comprehensive character of IAS 12. While the exemptions made in IAS 12 are understandable from a tax and economic perspective, it is not so clear why the logic, to only recognise deferred tax assets and deferred tax liabilities when it is probable that there will be future tax cash consequences in the foreseeable future, should not be applied to other temporary differences.

3 IAS 12 compared to the definitions, recognition and measurement principles in the current and new Conceptual framework

We will now analyse whether the definitions, recognition and measurement requirements in IAS 12 are consistent with the IFRS *Conceptual framework* and the new framework for financial reporting as proposed in the *Exposure draft*, in order to conclude whether these requirements have a conceptual foundation. Our analysis in the previous section of the exemptions in IAS 12 suggests that, in its current form, the comprehensive liability balance sheet model has problems and lacks a consistent theoretical foundation. We therefore examine the guidance of IAS 12 by comparing it first of all against the relevant concepts from the *Conceptual framework*. We specifically assess whether deferred tax assets and liabilities meet the definitions of assets and liabilities as well as the recognition and measurement criteria of the *Conceptual framework*. We will also apply the qualitative characteristics of the *Conceptual framework*. Since the IASB has recently published the *Exposure draft*, we also incorporate the proposed changes to the

Conceptual framework. We will examine and analyse the following key recognition and measurement requirements of IAS 12: 1) the balance sheet liability approach, 2) the comprehensive approach, 3) the probability threshold for deferred tax assets only, and 4) deferred taxes should not be discounted.

The balance sheet liability approach

IAS 12 has been built on the balance sheet (liability) approach, whereby deferred tax assets and liabilities are recognised based on temporary differences that are being identified by comparing the IFRS book and tax bases of assets and liabilities. The balance sheet approach included in IAS 12 implies that the focus is on deferred tax assets and deferred tax liabilities and not so much on the reported income tax expense in the income statement. The justification of the balance sheet approach is that deferred taxes should be recognised when the recovery of the carrying amount of assets or settlement of existing liabilities will create higher or lower income taxes than if the (IFRS carrying amounts of the) assets or liabilities were fully deductible or taxable. This general approach of IAS 12 is consistent with the *Conceptual framework*, which focuses on the financial position rather than on the performance as reported in the income statement. The definitions of assets and liabilities are included in paragraph 49a and 49b of the *Conceptual framework*, and require an asset to be *'a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity"* and a liability *"a present obligation of the entity arises from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits*.' Deferred tax assets and liabilities find their basis in past events that give rise to the temporary differences between the IFRS and tax book values of an asset or liability. Therefore, deferred tax assets can represent

future tax benefits from deductible temporary differences, while deferred tax liabilities can represent a present obligation towards the tax authorities to pay additional income taxes as a result taxable temporary differences.

The balance sheet approach ensures that income tax consequences of temporary differences, which themselves are part of the carrying amounts of assets and liabilities, are methodically reflected in the financial statements. Some argue that the income tax payment depends on future income and is therefore not a present obligation.[5] However, at least certain taxable temporary difference between the book and tax basis will result in a future tax payment when the carrying amount of the assets is recovered or the liability is settled. Thus, the existence of the temporary difference creates a present obligation. In case these temporary differences have future income tax consequences, these need to be included in the financial statement in order to faithfully present an entity's financial position. Some temporary differences result from differences in measurement between book and tax for example in the case of asset revaluations under IAS 40 *'Investment property'*. It can be questioned whether such a revaluation qualifies as a past event. An obligation however more often depends on a mix of past and future events and recognition ultimately depends on the identification of the critical event that triggers recognition as opposed to other events that *only* influence measurement (see e.g. Beaver, 1991 and Murray, 2010). The revaluation of the asset under IAS 40 is the result of a measurement event that creates income under IFRS and a temporary difference since the revaluation is not followed in the tax assessment. The creation of the temporary difference therefore triggers a present obligation to pay income taxes in the future since, assuming that the fair value estimate is accurate, the fair

[5] For instance, see paragraph 2.15 (p. 39) of 2011 EFRAG and ASB Discussion Paper: '*In their view, the future obligation to pay tax is not a present obligation because it is contingent on the earning of future income.*'

value is realized and translated into tax income in a future period either via the use of the asset (i.e. lease income) or via the sale of the asset (assuming that both types of results are taxable based on the relevant tax law). The key question thus is whether the recognition of IFRS income which is expected to result in future tax payments on the tax assessment is the trigger for recognition of the tax liability or whether the trigger should be the tax assessment itself. Although in this case there may not yet be a present obligation under the tax law, the fact that the IFRS income will in the future be taxed when it is translated into taxable profit either via use or via sale triggers in substance a present income tax obligation consistent with how IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* (IAS 37) deals with the definition of an obligation. Under the accrual basis of accounting model (IAS 1.27), assets and liabilities are recognised when they meet the IFRS definitions of assets and liabilities which may be different than the moment at which they meet the legal definition of an asset or liability. However, in case management intends to realise the asset in a manner that is non-taxable (i.e. because income from either use or sale is non-taxable) one could argue that there is no present obligation to pay income taxes in the future.

In the new *Exposure draft* the IASB proposes changes to the definitions of assets and liabilities. An asset is under the new definition: *'a present economic resource controlled by the entity as a result of past events'* and a liability: *'a present obligation of the entity to transfer an economic resource as a result of past events.'* An economic resource is defined as *'a right that has the potential to produce economic benefits'* and example of such economic benefits are cash inflows and cash outflows. These revised definitions lead to a similar conclusion, since deferred tax assets are present economic resources in the form of rights of future income tax payments

reductions that under control by the entity and are based on past events. Deferred tax liabilities are present obligations to transfer economic resources by means of additional future income tax payments that are the result from past events.

IAS 12 also requires that deferred tax assets and liabilities are re-measured when there is a change in the (substantially) enacted tax rate. This requirement refers to the liability elements in the balance sheet liability approach and implies that deferred tax assets and liabilities should be measured against the (substantially) enacted tax rate for which they are expected to be settled, rather than being accounting for based on the tax rate of origination, also referred to as the deferral method. The liability approach is consistent with the definitions of liabilities included in the *Conceptual framework* and *Exposure draft* and ensures that assets and liabilities are measured at the rate at which the asset will be recovered and the liability will be settled.

IAS 12 has several exemptions to the balance sheet approach so as to avoid undesired outcomes. Our analysis in the previous section shows that these particularly focus on not recognising deferred tax liabilities for certain taxable temporary differences. The concept of not recognising a deferred tax liability for certain taxable differences is inconsistent with the balance sheet approach, on which the standard has been built. The inclusions of the exemptions are also remarkable, given the IASB's focus on an entity's financial position. While the standard refers to exemptions, a better description would be exceptions, since many of them appear to be the result of arbitrary choices, and applying them is not a choice but a requirement in IAS 12. The exceptions included in the standard are needed, because the application of the principles of IAS 12 apparently does not provide the desired answer for every transaction. Some of the exceptions

seem to be aimed at achieving a match between income and (tax) expenses rather than at achieving a financial position that includes all assets and liabilities consistent with the definitions in the current *Conceptual framework* or the new *Exposure draft* (see also Brouwer et al., 2015). The many exceptions in IAS 12 is a conceptual problem, since they not only lack a theoretical basis but they are also inconsistent with the financial position approach and the balance sheet principles of IAS 12.

The comprehensive character of IAS 12

IAS 12 requires recognising deferred tax liabilities for all taxable temporary differences. The comprehensive approach is described in paragraph IAS 12.15, which indicates that, as a general rule, deferred tax liabilities should be recognised for all taxable temporary differences. The standard's comprehensive nature therefore requires entities to recognise deferred tax liabilities for all taxable temporary differences regardless of whether these are expected to result in future tax cash outflows or inflows. IAS 12.16 provides the justification, by explaining that because any taxable temporary difference on assets will ultimately reverse and create taxable profit when an entity recovers the carrying amount, the standard automatically assumes that there is an economic outflow. Some deferred tax balances are, owing to the almost permanent nature of their underlying temporary differences, not expected to reverse any time in the near future. As a result their association with future tax outflow is at the least uncertain. While IAS 12 prescribes the comprehensive approach, until 2001 entities in the UK were required to use partial allocation in accordance with Statement of Standard Accounting Practice 15 *Accounting for deferred taxation* (SSAP 15). SSAP 15 used the timing difference approach and in accordance with SSAP 15 paragraph 12, UK entities only recognized deferred taxes to the extent that these would

reverse in the *foreseeable future* (three to five years) and were not being replaced by deferred taxes from new timing differences. SSAP 15 was in 2000 replaced by Financial Reporting Standard 19 *Deferred Tax* (FRS 19) which was based on the comprehensive *incremental timing difference* approach in order to harmonize the UK practise with the international practise. The Financial Reporting Council however stressed that FRS 19 is conceptually different than IAS 12 because it felt that the application of the comprehensive requirements in IAS 12 results in *excessive* deferred tax balances[6].

The comprehensive model of IAS 12 does not allow partial allocation and requires entities to recognise all deferred tax liabilities. An example is the recognition of a deferred tax liability of a brand name acquired in a business combination with an indefinite life under IFRS and no tax base. IAS 12 requires a deferred tax liability to be recognised, increasing the amount of goodwill in the business combination although the deferred tax liability will only result in actual tax payments if the brand name itself will be sold separately. Except as a result of tax strategies, this is unlikely to happen in the near future, since the brand was just acquired. As a result, the likelihood that the deferred tax liability will result in a future tax outflow is low. However, the standard requires full recognition. Similarly, IAS 12 requires that one recognise deferred tax liabilities on temporary differences on investment entities that hold single assets (e.g. investment property) where the tax strategy is to sell the shares of the entities rather than the underlying assets. IAS 12 requires recognition of a deferred tax liability for any taxable temporary difference on the asset itself (*inside basis*), but also requires the parent entity not to recognise

[6]See https://www.frc.org.uk/accountants/accounting-and-reporting-policy/uk-accounting-standards/standards-in-issue/frs-19-deferred-tax.

any deferred taxes on temporary differences on the equity investment (*outside basis*) in case there is no intention to sell the entity in the foreseeable future. The economic reality is that the inside basis will likely never result in any tax payment, whereas the outside basis eventually will, since the legal and tax structure have been set up to have an exit strategy by selling the entity's shares rather than the asset itself. Yet, IAS 12 requires recognition of a full deferred tax liability on the inside basis taxable temporary difference and therefore ignores the economic substance.

While IAS 12 does not require that deferred tax liabilities are expected to result in future outflows, the *Conceptual framework*'s definition of liabilities explicitly refer to future cash flows as a liability '*is expected to result in an outflow from the entity of resources embodying economic benefits (paragraph 49).'* The definition of a liability in the *Conceptual framework* is specifically linked to a (potential or expected) future outflow of economic benefits. However, certain deferred tax liabilities under IAS 12 are at best weakly related to actual future cash flows. Thus, one may well ask whether all deferred tax liabilities recognised under IAS 12 meet the definition of a liability in the existing *Conceptual framework*. The new definitions in the *Exposure draft* no longer refer to the expected inflows or outflows but rather that there needs to be '*a present obligation of the entity to transfer an economic resource as a result of past events*'. The *Exposure draft* is removing outcome uncertainty from the definition and makes clear that under the new definition a liability exists in case there is at least one situation under which the entity will be required to transfer an economic resource. Hence, under the new definition in the *Exposure draft* deferred tax liabilities that are not expected to result in an outflow meet the criteria of a liability. However, the *Exposure draft* also mentions in paragraphs 5.13 and 5.17-5.19 that it may not be useful to recognize assets and liability in case there is a very low

probability of an inflow or outflow. Therefore while a liability may exist for a deferred taxes liability that has a low probability to result in a tax payment the *Exposure Draft* also suggests that it may not be useful to recognize these in the financial statements (see also Brouwer et al., 2015).

The lack of a clear relationship between certain deferred tax liabilities and cash flows may adversely impact the relevance and understandability of recognised deferred tax liabilities. The comprehensive approach is sometimes justified because its application ensures a relative stable effective income tax rate, which is considered useful in order to derive an income tax rate for future income. However, this could also imply that IAS 12 has built in a preference to match income before tax and income tax charge in the year in which a difference arises through the income statement (see also Brouwer et al., 2015). In the *Conceptual framework* and the *Exposure draft*, the IASB has described qualitative factors that ensure that information provided in the financial statements is value-relevant. However, the matching principle no longer forms part of these factors. In accordance with paragraph 95 of the *Conceptual framework*, assets and liabilities should not be recognised for the sole purposes of matching cost and revenues and the *Exposure draft* has similar requirements. The lack of a clear relationship with the tax cash flows also potentially impacts the value relevance of the reported effective income tax rate, since this tax rate may apply to income in the future, but it may not necessarily reflect a tax rate that represents income tax cash flows.[7] The argument that a reported stable income tax rate is useful therefore only holds for investors who wish to forecast net earnings rather than cash flows. The

[7] See also paragraph 2.21 (p. 40) Discussion Paper by EFRAG and ASB (2011): '*This relatively stable relationship may be useful in assessing the likely future reported effective tax rate that will apply to the entity's income. Some, however, would consider that the most relevant information is that which assists assessment of future cash flow rather than future reported income'.*

de facto and perceived lack of a clear relationship between the deferred tax liabilities and tax payments is a deviation from the *Conceptual framework* and the *Exposure Draft*, that can be attributed to the comprehensive nature of IAS 12, which requires full recognition of, in particular, deferred tax liabilities, regardless of whether future tax flows will or may arise resulting from the deferred tax liability. Thus, the comprehensive nature of deferred tax liabilities is a second conceptual problem we identify in IAS 12.

Probability for deferred tax assets only

IAS 12 requires the recognition of deferred tax assets in order to show a future reduction of income tax payments. However, the recognition criteria for deferred tax assets are different from those for deferred tax liabilities. IAS 12 paragraph 15 prescribes that deferred tax liabilities should be recognised for all taxable temporary differences except for certain specific exceptions. IAS 12 paragraph 16 assumes that every taxable temporary difference will ultimately reverse and therefore by default considers the outflow as probable. This assumption is not included for deferred tax assets. According to IAS 12, any differences between the carrying amount for book purposes and the tax base that will result in a future reduction of income tax payments are deductible temporary differences for which a deferred tax asset should be recognised when it is *probable* that sufficient future profit is available so that the deferred tax asset can be utilised. Thus, IAS 12 places an explicit probability threshold for the recognition of deferred tax assets while, for deferred tax liabilities, it assumes that the probability threshold has been met. IAS 12 paragraph 27 notes that future realisation of the tax benefit of an existing deductible temporary difference ultimately depends on the existence of sufficient available taxable income within a carry-back or carry-forward period under the applicable tax law. IAS 12 identifies different

sources of taxable income. IAS 12 paragraph 28 states that it is '*probable*' that future taxable profit will be available when there are sufficient taxable temporary differences that are expected to reverse in the same period as the deferred tax asset and relate to the same taxable entity and tax authorities or when an entity can use its carry-back rights. When there are insufficient appropriate taxable temporary differences to realise the deferred tax asset arising from deductible temporary differences, a deferred tax asset is – in accordance with IAS 12 paragraph 29 – only recognised to the extent that the entity will have sufficient future taxable profit, or when there are tax planning opportunities available to the entity that will create taxable profit in the appropriate periods. Applying a threshold for the recognition of assets is consistent with the current *Conceptual framework*, which requires that an asset or liability that meets the definition should only be recognised in case it is *probable* that there will be an inflow or outflow. Although IAS 12 has incorporated a recognition threshold at the asset side, such a threshold is not included for the liability side. Entities are required to recognise deferred tax liabilities for all taxable temporary differences, regardless of whether these are expected to result in future income tax payments.

A higher threshold for the recognition of deferred tax assets is sometimes considered reasonable because the tax law often puts more stringent conditions around the realization of deferred tax assets, for example through maximizing the carry forward period for unused loses, as compared to the settlement of deferred tax liability. These more stringent conditions increase the level of uncertainty and could influence the assessment around deferred tax asset recognition. This however does not mean that the threshold for recognizing deferred tax assets should be different than for deferred tax liabilities. In fact IAS 12 paragraph 35 already in its current form

acknowledges that for certain deferred tax assets (i.e. from unused carry forward losses) there could be more uncertainty around the future realization than for other deferred tax assets (i.e. from other temporary differences) and sets specific considerations for the recognition thereof. This does however not mean that the threshold itself is set higher, but rather that there is more uncertainty about whether the threshold is met and therefore requires more supporting evidence before recognition is justified. In the *Exposure draft*, the IASB proposes removing the probable threshold and to replace it with certain factors (e.g. relevance, faithful representation) that must be considered in deciding whether or not an asset and/or liability should be recognised. However, paragraphs 5.13 and 5.17-5.19 of the *Exposure draft* also include a potential recognition threshold by indicating that recognition may not provide relevant information if there is only a low probability that an inflow or outflow of economic benefits will occur. This concept could still justify the inclusion of a probability threshold for the recognition of assets or liabilities in a standard, although the threshold level may be lower than today. More importantly, the *Exposure Draft* does not distinguish between assets and liabilities and therefore requires applying the same criteria for both assets and liabilities.

The current models for recognising deferred tax assets and deferred tax liabilities under IAS 12 are not the same. This difference cannot be explained from a conceptual perspective, and creates inconsistencies within the standard. Also the qualitative characteristics do not explain this difference, since conservatism is not a qualitative characteristic included in the *Conceptual framework*. In the *Exposure draft*, the IASB proposes re-introducing prudence as a qualitative factor in order to ensure adequate carefulness in case there is uncertainty. However, in its explanation of prudence, the IASB stresses that this should focus on neutrality to ensure that

assets and liabilities are not overstated and not understated. Thus, this is a different concept to the asymmetrical verification requirements for deferred tax assets versus deferred tax liabilities that create conservatism and inconsistencies in the current IAS 12. From a conceptual perspective, the inconsistencies between the thresholds for deferred tax assets and deferred tax liabilities in IAS 12 are a concern under both the existing *Conceptual framework* and the *Exposure draft*, since neither justifies a higher threshold for assets than for liabilities. Thus, the probability threshold for deferred taxes only is a third conceptual problem in IAS 12.

Deferred tax assets and liabilities are not discounted

A controversial issue in IAS 12 is that deferred taxes should be measured on a nominal basis and that time value should not be considered. IAS 12 paragraph 53 prohibits the discounting of deferred taxes, because this would require detailed scheduling of the timing of the reversal of individual temporary differences and the IASB believes that this is in many cases *impracticable* and *highly complex*. IAS 12 paragraph 54 therefore states that it is inappropriate to discount deferred taxes. Paragraph IAS 12.55 clarifies that when the carrying book amounts are based on a present value, the related temporary differences and deferred taxes are discounted by nature (for instance, in the case of retirement benefit obligations). While IFRS does not allow discounting of deferred taxes, local standard-setters have allowed or required the discounting of deferred taxes. The ASB in the UK allowed discounting based on the expected reversal of timing differences in FRS 19. Also in France and the Netherlands, the local GAAP standards required or permitted discounting of deferred taxes. Although the lack of discounting is not a clear deviation from the general measurement principles in the *Conceptual framework* the *Exposure draft* indicates that measures under current value, in particular based on cash flow techniques, should

consider time value. Also other IFRS standards, such as IAS 37, require discounting to reflect the time value of money. While the IASB uses the complexity argument for IAS 12, this argument doesn't seem to apply for other standards. The current nominal measurement method in IAS 12 is therefore rather a measurement exception. The impact of the lack of discounting is in particular strengthened by the comprehensive approach applied in IAS 12. This combination can significantly overstate reported deferred tax liabilities and potentially plays a key role in the value relevance of deferred taxes. For instance, the deferred tax liability on a brand name with an indefinite life under IFRS acquired in a business combination with no tax base must be recognised on a nominal basis even if there would be a remote change that the deferred tax liability would result in a tax cash outflow in the foreseeable future. The economic value of such liability is significantly lower that its nominal value. This could be reflected in the financial statements if IAS 12 would allow deferred taxes to be discounted. Thus, the IASB's decision to uphold the argument of reliability over relevance has had a strong impact, also on understandability, since many would acknowledge that, conceptually, time value should be considered when an entity is given the opportunity to pay income taxes in the future rather than today. Thus, the lack of discounting is a fourth conceptual problem in IAS 12.

4 Research into income tax accounting

The comprehensive balance sheet approach of IAS 12 has drawn significant criticism in recent years. Our analysis in the previous section shows that such criticism is well-founded, since IAS 12 has conceptual problems owing to its exceptions, its comprehensive nature, different recognition criteria for deferred tax assets and deferred tax liabilities, and a failure to address time value through discounting. The criticism of the balance sheet approach which forms the

basis of accounting for income taxes is not new. The model has been questioned for several decades for not being sound and lacking relevance. This has given rise to a significant body of academic literature, which provides valuable insights into shortcomings of the balance sheet approach and gives direction to potential solutions. While a single individual study may not be able to address all the key conceptual problems in IAS 12, a comprehensive analysis of the literature over the past decades provides valuable insights into the root causes of the conceptual problems and provides possible solutions in order to develop a standard that is more relevant and better understood than current IAS 12. Since the IASB primarily focuses on investors, as also highlighted in the *Conceptual framework*, we focus in particular on the empirical value relevance literature but are also including other normative and theoretical studies. While we have performed our own analysis of the relevant literature, we have also considered the already comprehensive value relevance literature overview that was provided through the income tax accounting research overview of Graham et al. (2012). In Table 1, we have summarised the literature that helps us to understand what drives the (lack of) value relevance of deferred taxes. We present the results per topic in chronological order, since research often builds on previous results. We analyse the research results in some detail and analyse the implications for IAS 12. We structured our analysis around the following key issues: decision usefulness of interperiod income tax allocation, value relevance of the comprehensive balance sheet approach, probability threshold for deferred tax assets, and deferred taxes and discounting.

Much of the empirical research in this area has been performed using data from financial statements of U.S. listed entities. While there have been and are differences between IAS 12 and its U.S. GAAP equivalent Accounting Standard Codification 740 *Income taxes* (ASC 740), the

codified version of FAS 109, the key recognition and measurement requirements for the four topics under review are very similar under IAS 12 and ASC 740. Some of the older research is based on the APB 11, the predecessor of FAS 109. This standard was different from ASC 740 and FAS 109 in that it was more conservative in relation to the recognition of deferred tax assets, it prescribed the deferral approach under which deferred tax liabilities are not adjusted for enacted tax rate changes and it was more focussed on the income statement through the concept of timing differences as opposed to temporary differences. We considered these differences in our analysis.

Table 1: Overview of the tax accounting literature

Primary research area	Paper	Type of research	Contribution to key issues			
			A	B	C	D
Value relevance of interperiod income tax allocation	Chambers, 1968	Theoretical	ü	ü		
	Barton, 1970	Theoretical	ü	ü		
	Buckley, 1972	Theoretical	ü			
	Beaver and Dukes, 1972	Empirical	ü			
	Rayburn, 1986	Empirical	ü			
	Chaney and Jeter, 1994	Empirical	ü	ü		ü
Value relevance of reversing deferred tax balances	Davidson, 1958	Analytical		ü		
	Givoly and Hayn, 1992	Empirical		ü		ü
	Amir et al., 1997	Empirical		ü		
	Schultz and Johnson, 1998	Theoretical		ü		
	Ayers et al., 1998	Empirical		ü	ü	
	Sansing, 1998	Analytical		ü		ü
	White et al., 1998	Theoretical		ü		
	Guenther and Sansing ,2000	Analytical		ü		ü
	Dhaliwal et al., 2000	Empirical		ü		
	Chen and Schoderbek, 2000	Empirical		ü		
	Amir et al., 2001	Analytical		ü		
	Citron, 2001	Empirical		ü		
	Dotan, 2003	Analytical		ü		ü
	Guenther and Sansing ,2004	Analytical		ü		ü
	Gordon and Joos, 2004	Empirical		ü		
	Chludek, 2011	Empirical		ü	ü	
	Laux, 2013	Empirical		ü		ü
	Brouwer et al., 2015	Theoretical			ü	
Value relevance of valuation allowance	Miller and Skinner,1998	Empirical			ü	
	Amir and Sougiannis, 1999	Empirical			ü	
	Kumar and Visvanathan, 2003	Empirical			ü	

Deferred taxes and discounting	Nurnberg, 1972	Theoretical				ü
	Wolk and Tearney, 1980	Analytical				ü
	Brown and Lippitt, 1987	Analytical				ü
	Rayburn, 1987	Analytical				ü

Legend of key issues:
A. Decision usefulness of interperiod income tax allocation
B. Comprehensive balance sheet approach
C. Probability threshold for deferred tax assets only
D. Discounting deferred taxes

The decision usefulness of interperiod income tax allocation

Academics have for several decades questioned and challenged the interperiod income tax allocation model. The interperiod income tax allocation model considers income taxes as an expense for which accrual accounting should be applied. In theoretical studies, some argue that tax authorities are a stakeholder in the entity and are entitled to a share of the earned profit, similar to shareholders (e.g. see Chambers, 1968; Barton, 1970; Buckley, 1972). Thus, they see income tax as a mechanism to share profits rather than to allocate profits and argued that income taxes should be accounted for under the flow-through method, in which the income tax expense equals the amount due on the tax return submitted to the tax authorities (e.g. Chambers, 1968; Buckley, 1972). This view completely ignores deferred taxes. However, standard-setters were supported in their decision to embrace the interperiod income tax allocation model, since an empirical study by Beaver and Dukes (1972) found that the inclusion of deferred taxes in net income increases value relevance. Beaver and Dukes (1972) found that net income including deferred taxes reported under APB 11 shows a stronger relationship with unexpected share returns than net income without deferred taxes. Rayburn (1986) also tested the usefulness of deferred tax accruals through the association with security returns. She finds that the deferred tax accruals reported under APB 11 provides more useful information to the market compared to tax cash flows only. More recent research by Chaney and Jeter (1994) found a negative relationship

between share returns and deferred taxes reported under APB 11. Based on these results, they concluded that deferred taxes are associated with share returns and therefore have value relevance. While these studies have their limitations, for example because they are based on the old standard APB 11 using a concept of timing differences as opposed to temporary differences prescribed under the current model, the empirical results do show that interperiod income tax allocation has certain value-relevance for investors. These results indicate that any new concept around the accounting for income taxes should include deferred taxes since the flow-through concept is not supported by empirical research results.

The value relevance of the balance sheet approach

While the initial academic empirical results support the interperiod income tax allocation model, the question remained which approach should be applied. The timing of the future reversal of deferred tax assets and liabilities and the association of the reversal with tax payments and/or receipts was a key focus area in many papers. Using numerical examples, Davidson (1958) argued that deferred tax liabilities concerning accelerated depreciation will continue to grow if new temporary differences from investments are greater than the reversal of existing temporary differences. Thus, Chambers (1968) suggests that interperiod income tax allocation has strong elements of conservatism. Others suggest that since deferred tax liabilities often don't reverse and therefore will not result in a future outflow, they may not qualify as a liability (e.g. Barton, 1970). In an empirical study using a cumulative abnormal returns model, Givoly and Hayn (1992) tested investors' responses to proposed income tax rate changes. Based on their results, they concluded that investors considered the likelihood and timing of settlement of deferred tax liabilities that are reported under APB 11. Givoly and Hayn (1992) also concluded that investors

appear to translate comprehensive into partial allocation. Under the partial allocation method, deferred taxes are only recognised when they are expected to reverse in the foreseeable future. Chaney and Jeter (1994) also conclude that investors appear to apply the partial allocation method when valuing deferred tax liabilities. Using a valuation model derived from the Feltham and Ohlson (1995) model, Amir et al. (1997) found that deferred tax liabilities in relation to accelerated depreciation reported under FAS 109 are not valued by investors, because these deferred tax liabilities are not expected to reverse, since entities will continue to invest in these core asset types. The results of Amir et al.'s (1997) study suggest that the likelihood of reversal influences the value relevance, i.e. the higher the likelihood of reversal of deferred tax liabilities is, the higher their value relevance.

In an empirical study using Feltham and Ohlson's (1995) framework, Ayers (1998) found that the comprehensive balance sheet approach as introduced in FAS 109 is more value-relevant for investors than the old standard, APB 11. They attribute the increase of value relevance to the fact that the new standard among others requires entities to apply the liability method where deferred tax balances are adjusted in case of enacted tax rate changes as well as the changes made around the recognition of deferred tax assets. Via empirical tests, Dhaliwal et al. (2000) found that the negative association between the market value of equity and the LIFO reserve documented in prior research is caused by the deferred tax implications on these reserves. They therefore conclude that their results indicate that deferred tax liabilities are considered by investors resulting in a reduction of the entity's market value. Although these study results provide evidence around the value relevance of deferred taxes, Holthausen and Watts (2001) and also Kothari and Shanken (2003) point to theoretical and econometric issues around the use of the

Feltham and Ohlson (1995) price level models in these studies. Graham et al. (2012) therefore conclude that it is difficult to interpret the results of these papers and in their view the question whether deferred taxes are useful remains ultimately unanswered. While the points raised by Holthausen and Watts (2001) and Kothari and Shanken (2003) are valid we also note that for example Ayers (1998) only looks to the correct sign of the regression coefficients rather than its magnitude. These study results therefore indicate that deferred taxes computed based on the balance sheet approach are value relevant but the degree of value relevance and which specific components drive the value relevance remains unclear.

In a theoretical study, Schultz and Johnson (1998) describe the debate in the deferred tax literature by evaluating different income tax allocation models. They review the comprehensive model, the partial allocation model and alternative approaches such as the valuation adjustment approach. The valuation adjustment approach or net of tax method argues that the carrying values of the underlying assets and liabilities should be adjusted for the income tax consequences rather than recognising deferred taxes as separate assets and liabilities. Schultz and Johnson (1998) further indicate that temporary differences differ in origination. Some temporary differences arise because book income is recognised before tax income, while others arise because tax income is recognised prior to book income. In their review of the arguments for the different methods, Schultz and Johnson (1998) indicate that the balance sheet approach may fit well if book income is recognised before tax income, but that if tax income is recognised prior to book income, the net of tax method would be more appropriate.

Chen and Schoderbek (2000) find that analysts do not adequately forecast the earnings consequences from tax rate changes using FAS 109 data. While this suggests market inefficiencies around the earnings consequences of the balance sheet liability model and alternative explanation is that the magnitude of the tax rate change of 1% was not significant enough to find a response (see also Graham et al., 2012). Research by Citron (2001) using UK data and a modified Feltham and Ohlson (1995) empirical model provided evidence that the value relevance of reported deferred tax balances in the UK is driven by the deferred tax liabilities that are expected to reverse in the foreseeable future. Citron (2001), and Gordon and Joos (2004) found that partial allocation used under SSAP 15, whereby deferred taxes are only recognized if they reverse in the foreseeable future and not being replaced, provides investors with value-relevant information. They did not find support for the comprehensive method, since the unrecognised component of deferred taxes was not value-relevant. Opponents of partial allocation have concerns that the partial allocation method would allow too much discretion and could lead to opportunistic behaviours (see also Ayers, 1998). Gordon and Joos (2004) found evidence for some opportunistic behaviour, but also conclude that partial allocation increases the decision usefulness of deferred taxes. These study results altogether indicate that deferred tax balances reversing in the foreseeable future without being replaced are value relevant for investors because these deferred tax balances are expected to influence the future tax payments. Up until the early 2000s, many studies assumed that the timing of the reversal of deferred taxes was key in determining the timing of the cash flow consequences (see also White et al., 1998). Using mathematical models, Sansing (1998) was the first to conclude that deferred taxes are an expense even if the deferred tax liability does not reverse. In addition, in an analytical study Amir et al. (2001) provided further insights into the conventional thinking of the reversal of

deferred tax liabilities arising from accelerated depreciation. By using mathematical models derived from the entity valuation models of Feltham and Ohlson (1996), they show that newly created temporary differences in accelerated depreciation are not offsetting the tax cash flows from temporary differences that are reversing. These results indicate that deferred tax liabilities cannot be ignored based on the argument that the reversal of existing temporary differences is (more than) offset by new temporary differences. On the other hand, Amir et al. (2001) conclude that the reversal of deferred taxes does influence its value relevance. They also see the partial allocation method as a potential solution to increase value relevance.

In analytical studies, using mathematical models, Guenther and Sansing (2000, 2004) and Dotan (2003) explain that deferred tax balances should be divided into two categories:

- Temporary differences that arise because transactions and/or events are first brought into the financial statements and then in the tax return (*Book-First temporary differences*)
- Temporary differences that arise because transactions and/or events are first brought into the tax return and then in the financial statements (*Tax-First temporary differences*).

The separation of temporary differences is important because, according to these studies, Book-First temporary differences will result in future tax payments when the assets are recovered or the liabilities are settled and brought into the tax return, while Tax-First temporary differences will not, because these have already resulted in a tax cash flow when these items were included in the tax returns. Guenther and Sansing (2000, 2004) and Dotan (2003) demonstrate that it is not the reversal but the timing of the actual tax payments or tax receipts that creates the value relevance of deferred taxes. Research by Chludek (2011), using a variation of the Feltham and Ohlson (1995) model, shows that deferred tax liabilities reported under IFRS are not reflected in

entity value and that current reported deferred tax liabilities have no clear relationship with future tax payments. Laux (2013) empirically tested the analytical models of Guenther and Sansing (2000, 2004) and Dotan (2003), using a variation of the Feltham and Ohlson (1995) model. Laux (2013) also tested the contradiction between the theorem of Guenther and Sansing (2000, 2004) and Dotan (2003) that the reversal of deferred taxes does not influence the value relevance versus Amir el at. (2001) who claim that reversal matter. Laux (2013) found that deferred taxes arising from Book-First temporary differences are value-relevant, since they result in a future tax cash flow, while Tax-First temporary differences are not value-relevant, since the underlying tax cash flow has already occurred in the past.

Laux's (2013) results may not be fully intuitive from a valuation perspective in particular when it relates to Tax-First taxable temporary differences in accelerated depreciation, which is explained in example 3.

Example 3: The tax amortisation benefits implications

Entity A acquires property, plant and equipment (PP&E) of 1,000. For IFRS purposes, entity A depreciates PP&E in 10 years. For tax purposes, the PP&E is fully depreciated in year 1. As a result, at the end of year 1, a taxable temporary difference of 900 exists. Entity B acquires PP&E of 1,000. Both for IFRS purposes and for tax purposes, entity B depreciates PP&E over 10 years. As a result, at the end of year 1, there is no temporary difference.

The taxable temporary difference of entity A is a Tax-First temporary difference and, according to Laux (2013), such temporary difference is not value-relevant. However, the fact that entity A has fully used the tax benefit in year 1, whereas entity B still has the tax benefit available relating to 900 depreciation of PP&E will impact on the valuation of entity A as compared to entity B.

Thus, intuitively, it is hard to understand why it would not be relevant to adjust for this difference in entity A's financial statements. As also highlighted by Dotan (2013) and Laux (2013) in their studies, this is also an area in which, from an analytical perspective Dotan (2013) and Guenther and Sansing (2000, 2004), have different views. Guenther and Sansing (2000, 2004) and Dotan (2003) agree that a deferred tax liability arising from a taxable depreciation difference does not qualify as a liability, because it does not relate to future tax cash outflows. Dotan (2003) explains that the deferred tax liability in relation to depreciation differences represents tax amortisation benefits from the past rather than future tax payments. The reversal of the deferred tax liability is therefore the recognition of these tax amortisation benefits in the income statements instead of a reflection of tax payments. However, Guenther and Sansing (2000, 2004) argue that there is still a valuation difference as a result of the consumption of the tax amortisation benefits. Dotan (2013) explains that a valuation adjustment is needed in Guenther and Sansing's (2000) study because they use *replacement cost* rather than *value in use* in their present value mathematical models. To reconcile the value in use with the replacement cost approach, a valuation adjustment would be needed which, in Guenther and Sansing's (2000) view, is the corresponding deferred tax liability. Dotan (2013) claims that the replacement cost in Guenther and Sansing's (2000) model is incorrect because, in his view, there is no secondary market for used assets given the asymmetric tax law requirement which demands that sellers pay income taxes immediately at the time of the sale whereas the buyer would only get his tax deduction in the future. As a result sellers and buyers are inclined to avoid taxable transactions involving used assets since the present value of the buyer's future tax deductions are less than the direct tax payment of the seller. However, the view that Tax-First differences do have valuation consequences would be consistent with the valuation adjustment approach, an alternative method

that was already recommend by Schultz and Johnson (1998) for Tax-First differences. In this approach, any differences in the future tax consequences are included in the underlying assets and liabilities rather than recognised as separate deferred tax assets and deferred tax liabilities.

The results from the literature thus suggest that, under the current comprehensive balance sheet approach, only deferred taxes that result in future tax cash flows have value relevance for investors. These are deferred taxes that originate from Book-First temporary differences that arise because transactions and/or events are first brought into the financial statements and then in the tax return. The deferred taxes that are recognised for Tax-First differences do not have future cash flow consequences and are, in their current form, not considered by investors. However, as explained by Guenther and Sansing (2000, 2004), Tax-First differences do have valuation consequences that need to be reflected to address the fact that there is a difference in valuation between entity A that took the opportunity to accelerate its tax depreciation versus entity B that is still entitled to a full tax depreciation. The replacement cost assumption of Guenther and Sansing (2000, 2004) also aligns better with the current approach taken in accounting, because the underlying assets and liabilities that include these tax benefits are typically measured at historical cost (for instance, property, plant and equipment) rather than a value in use approach, which is being used by Dotan (2013). Thus, the consumption of the tax benefit would, consistent with Guenther and Sansing's (2000, 2004) view, need to be reflected in the financial statements similarly to the depreciation of property, plant and equipment. However, based on the argumentation of Guenther and Sansing (2000) and in particular the empirical results of Laux (2013), these should not be labelled *deferred taxes* but rather *tax valuation adjustments*, to clearly distinguish between temporary differences that have future cash flow consequences

(Book-First) versus temporary differences that have valuation adjustments through the consumption of tax benefits (Tax-First).

Probability threshold for deferred tax assets

In accordance with IAS 12, a deferred tax asset should only be recognised when it is *probable* that it will be realised in the future. Under the U.S. GAAP equivalent ASC 740, a deferred tax asset should be reduced by a valuation allowance up to the amount where it is *more likely than not* that the net deferred tax asset will be realised. Under both standards, it is the understanding that the probability threshold means a change of greater than 50% that the deferred tax asset will be realised. While IAS 12 requires a probability threshold for deferred tax assets such a threshold is not applicable for deferred tax liabilities, which strengthens the standard's conservative character (see also Brouwer et al., 2015). When accounting standard-setters introduced this concept of probability for deferred tax assets, there were initial concerns that management was given too much discretion to manage their net earnings. However, empirical research by Miller and Skinner (1998) demonstrates, through testing of the regression between the valuation allowance and different proxies for available future income, that management recognises deferred tax assets in accordance with their expected future realisation. Furthermore, they found no indications of earnings management, although this was not the primary focus of their research.

Ayers (1998) provides evidence that deferred tax assets and the applied valuation of deferred tax assets based on the more likely than not threshold under FAS 109 are respectively positively and negatively associated with entity value. Thus, Ayers (1998) concludes that deferred tax assets and the concept of valuation allowances under FAS 109 are value-relevant for investors. Amir

and Sougiannis (1999) found a positive relationship between these deferred tax assets from carry-forward losses reported under FAS 109 and share prices using a valuation model derived from Feltham and Ohlson (1995). They also found that analysts are not able to fully capture the future cash flow implications from deferred tax assets arising from tax losses carry-forward, and attribute these results to the fact that the existence of deferred tax assets arising from tax losses provides mixed signals to analysts. Amir and Sougiannis (1999) explain that, from a *measurement perspective*, recognised deferred tax assets from tax losses carry-forward provide information regarding management's estimate of future profits. However, from an *information perspective*, the existence of deferred tax assets from tax losses carry-forward signals a higher risk of future losses.

In an event study using three-day cumulative market residual returns, Kumar and Visvanathan (2003) found that publicly announced changes in the valuation allowances of deferred tax assets have information content for investors. They found that an increase in the valuation allowance is negatively related to abnormal returns, while a decrease in the valuation allowance is positively related to abnormal returns. Kumar and Visvanathan (2003) conclude that a change in the valuation allowances inform investors about changed management expectations regarding future profitability and allow investors to update their expectations. Chludek (2011) finds that investors consider large deferred tax assets in the market valuation of entities that report under IFRS. Altogether, the empirical results support the concept of recognising deferred tax assets based on an expected future realisation using a probability threshold. The approach results in decision-useful information for investors. While the application of a threshold for deferred tax assets results in useful information for investors owing to the clear link with the future cash flows, such

a threshold does not exist for deferred tax liabilities. However, various empirical studies suggest that investors only consider deferred taxes that are highly likely to affect future tax cash flows. Givoly and Hayn's (1992) study, for instance, suggests that investors consider the likelihood that deferred taxes result in tax payments. Also, the results of Amir et al. (1997), Citron (2001) and Gordon and Joos (2004) as described in the previous paragraph recommend a threshold for the recognition of deferred tax liabilities in order to make them more decision-useful. The research results we have discussed in this and the previous paragraph provide support for a model in which both deferred tax assets and deferred tax liabilities are recognised only when the likelihood that they affect future tax cash flows reaches a certain threshold.

Time value and deferred taxes in IAS 12

A key issue in the measurement of deferred tax assets and liabilities is whether they should be recognised based on a nominal value or on a discounted basis. Discounting was long considered a potential solution to the shortcoming of comprehensive income tax allocation, since the value relevance of deferred tax liabilities that were not expected to reverse for a very long time would be significantly reduced. Nurnberg (1972) already concluded in a theoretical study that discounted deferred tax balances are more useful for investors. He argued that deferred tax liabilities should be discounted upon initial recognition in the balance sheet to reflect the benefit associated with the deferral of income tax payments. While there was consensus about the time value implication of deferred taxes, there have been disagreements on what rate should be used to discount deferred taxes. Nurnberg (1972) argued that the correct discount rate would be the post-tax cost of either debt or equity, depending on whether the available resources from deferred tax liabilities were used to repay debt-holders or equity-holders. He disagrees with the

argument that deferred taxes are an interest-free government loan, because deferred tax liabilities can be reinvested in the entity. However, Wolk and Tearney (1980) disagreed with a post-tax discount rate since, based on an analytical study, they argue that, consistent with other discount rates used in financial accounting, a pre-tax discount rate should be used to discount deferred tax liabilities. Based on his analytical study, Rayburn (1987) concludes that the FASB's decision to require the balance liability approach also requires that deferred tax liabilities should be discounted. In an analytical study, Brown and Lippitt (1987) indicate that the discounting of deferred tax liabilities requires a method to determine the reversal of deferred tax liabilities, for instance, first-in first out.

While in theoretical studies there is significant support for the discounting of deferred taxes from a theoretical and analytical perspective, there is limited empirical evidence on the impacts of discounting of deferred taxes. Givoly and Hayn (1992) as well as Chaney and Jeter (1994) found that only a portion of the deferred tax value is reflected in the entity's market value. In their view, this is because investors may discount deferred tax liabilities. Chaney and Jeter (1994) also found empirical evidence for partial allocation and suggest that this method would render discounting potentially redundant. However, there is no direct empirical evidence that tests the implications of discounting on deferred taxes. Using a mathematical model, Sansing (1998) demonstrates that a deferred tax liability in relation to depreciation differences should be discounted by a factor that equals the tax depreciation rate divided by the tax depreciation rate plus the cost of capital of the entity, to align the book and the market value of an entity. Further, Guenther and Sansing (2000) demonstrate that a reversal method is not needed for depreciation differences, since the market value of deferred tax liabilities relating to depreciation differences

depends on the *tax depreciation rate* and the *discount rate*. They conclude that the timing of the reversal of these deferred tax liabilities is not relevant and that the reversal pattern should not be used to discount deferred tax liabilities in relation to depreciation and amortisation. They also conclude that discounting is not needed for Book-First temporary differences in case the underlying assets or liability that creates the temporary difference is already discounted. In this case, the temporary difference is already discounted, and further discounting would be incorrect. Dotan (2003) as well as Guenther and Sansing (2000, 2004) explain that the present value of the deferred tax liability depends on the cash flows associated with the tax depreciation and the discount rate, and conclude that income tax expenses will only affect an entity's market value when it represents cash flows. While Guenther and Sansing (2000, 2004) argue that a deferred tax liability in relation to depreciation differences is not a liability, because it will not result in a future tax cash flow, they still believe that a deferred tax liability should reflect the valuation consequences from the utilisation of discounted tax amortisation benefits associated with these assets. Laux (2013) argues, in line with his empirical findings, that the discounting of depreciation deferred tax liabilities is not relevant, since there are no future cash consequences.

Based on the literature, Book-First deferred taxes should be discounted, based on the cost of capital to the entity, in case the temporary difference is not discounted (e.g. Sansing, 1998, Guenther and Sansing, 2000, 2004 and Dotan, 2003). Based on the results of Sansing (1998) as well as Guenther and Sansing (2000, 2004), Tax-Fist temporary that result in valuation adjustments should also be discounted. The time value should be determined by comparing the net present value of the future tax benefits of an asset or liability based on the current tax base against the net present value of future tax savings based on its book value.

5 A proposed model to make deferred taxes relevant

The current comprehensive income tax allocation has been subject to significant criticism since its introduction. In 2011, the EFRAG and ASB published a discussion paper that summarised the potential shortcomings of IAS 12 and possible solutions to address these. Solutions proposed varied from making changes to IAS 12 such as the inclusion of discounting to alternative solutions to the comprehensive balance sheet approach such as partial allocation, the accruals approach and the flow-through method that would completely ignore deferred taxes. The feedback to the paper indicates resistance to changing the overall model and recommended that the IASB should continue making limited improvements to IAS 12. At the same time, mainly local standard-setters and accounting bodies indicated that we needed a better understanding of user needs before making any changes to the existing model. In 2016, the IASB initiated this and started a research project into income taxes. However, it soon concluded that the current model should not be changed and that it would halt its further research into this topic. In our view, this decision did not sufficiently consider the results and answers that can be found in the large body of existing academic literature into the value relevance of deferred taxes, as also described in this paper.

Our analysis demonstrates that the comprehensive nature of deferred tax liabilities, the lack of discounting, the many exceptions, and the lack of a probability threshold for deferred tax liabilities are key conceptual problems in IAS 12 that must be addressed. While empirical research demonstrates that deferred taxes increase financial reporting's decision usefulness, the literature also indicates that investors only consider deferred taxes that are highly likely to affect future tax cash flows. In particular, Laux's (2013) empirical results, supported by analytical

studies by Guenther and Sansing (2000, 2004) as well as Dotan (2003), demonstrate that the value relevance of deferred taxes depends on whether these relate to actual future tax cash flows. The research results we discussed provide important insights for arriving at new principles and explain that the current comprehensive model, which relies on the reversal of deferred taxes for all temporary differences, does not address investors' needs as well as it could. Our analysis indicates that expected cash inflows and outflows should be the leading principle in designing a new standard for income taxes. Table 2 summarises our proposed approach:

Table 2: A proposal for new income tax accounting principles

Temporary difference	Approach	Method	Thresholds	Measurement
Book-First	Balance sheet	Partial	The same for DTA & DTL	Discounted
Tax-First	Valuation adjustment	Partial	The same for DTA & DTL	Discounted

Based on our results we conclude that a new model for the accounting of income taxes should clearly distinguish between temporary differences that are expected to result in a future tax cash flow and temporary differences that are not. This would require changing the current balance sheet approach that is being applied for all temporary differences. The balance sheet approach should only be applied to temporary differences that are first included in the financial statements and only thereafter in the tax return (Book-First). These deferred tax assets and deferred tax liabilities will result in future tax cash flows, whereas this is not the case for temporary differences from the balance sheet approach that are first included in the tax return and then in the financial statements (Tax-First). This proposal for Book-First temporary differences has some similarities with the accruals approach under which deferred tax accruals are recognized on all income and expense that are included in the financial statements. While this method also ensures that the recorded accruals have a better alignment with cash flows, it also has a matching

element and the balance sheet approach is more clearly alignment with the definitions in the *Conceptual framework* and the *Exposure draft*. The approach to use the balance sheet approach for Book-First differences finds support in the literature (e.g. Schultz and Johnson, 1998; Guenther and Sansing, 2000; 2004; Dotan, 2003 and Laux, 2013).

Consistent with the literature (Guenther and Sansing (2000, 2004) as well as Dotan (2013)), the balance sheet approach should not be used for Tax-First differences, since the deferred taxes created in this model do not have future tax cash flow consequences. However, Tax-First temporary do have valuation consequences (see also Sansing, 2000, 2004). To address the valuation consequences, for the Tax-First differences, the valuation adjustment approach should be applied to adjust the value of the carrying amount of the underlying asset or liability. Under the valuation adjustment approach, the carrying values of assets and liabilities are split into a portion that provides economic benefits (or results in outflows) to the entity and a portion that reflects tax benefits (or tax charges). If an entity has used all the tax benefits or is not entitled to tax benefits at all (e.g. a tax amortisation benefit on depreciable and/or amortisable assets), the accruing net value of assets should be reduced accordingly. In addition, where book-deferred income or book-other liabilities are taxed in advance the valuation consequences should also be considered in the financial statements. Based on the literature, for the Tax-First differences, a separate *tax valuation adjustment* should be identified as a component of the value of the underlying asset or liability to account for these valuation consequences. In addition, deferred tax assets and/or deferred tax liabilities are recognized against the tax valuation adjustment accrual in case the tax valuation adjustment will have an impact on the future tax payments and/or tax receipts. The creation of a separate tax valuation adjustment account allows to separately track

the pre-tax and post-tax values and therefore addresses a key point of criticism to the valuation adjustment method. The proposal of a balance sheet approach for Book-First differences and a valuation adjustment approach for Tax-First differences is supported by the literature (Schultz and Johnson, 1998, Guenther and Sansing, 2000; 2004; Dotan, 2003 and Laux, 2013).

Based on the literature, the current comprehensive approach should be replaced by the partial allocation method so as to remove the asymmetrical verification requirements for deferred tax assets and deferred tax liabilities. Under the revised partial allocation method, deferred tax would be recognised only when it is probable that the temporary difference will result in future tax inflows or outflows in the future. We use probable as the threshold to recognize deferred taxes since the current definitions of assets and liabilities in the *Conceptual Framework* use probable. However, other (lower) thresholds are also possible, in particular since the *Exposure draft* no longer uses probable, as long as the threshold for deferred tax assets and deferred tax liabilities are the same. The partial allocation method should not consider whether temporary differences are being replaced since Sansing (1998) and Amir et al, 2001) have provided proof that this model does not hold. This proposal for partial allocation is also widely supported by the literature (Chaney and Jeter, 1994; Citron, 2001; Amir et al., 2001; Gordon and Joos, 2004).

Additionally, deferred tax assets and deferred tax liabilities should be discounted to reflect the time value of money. Discounting of deferred taxes also finds support in the literature (e.g. Nurnberg, 1972; Wolk and Tearney, 1980; Rayburn, 1987 and Guenther and Sansing, 2000; 2004). Although preparers and the IASB have expressed concerns that discounting increases complexity, based on the existing research, time value should be considered, to reflect economic

reality that the deferral of tax payments has a time value component. The partial allocation method significantly reduces this burden, since the number of temporary differences will be considerably less and their link to future cash flows will be clearer. Thus, the argument in IAS 12 that discounting is very complex because it requires detailed scheduling does not apply for partial Book-First temporary differences. Another compensating factor is that various Book-First temporary differences are already measured on a present value discounted basis – like post-employment benefits, provisions and other items. These deferred tax balances are themselves already discounted, and further discounting would be incorrect. For Tax-First differences the deferred tax assets and the initially recognized tax valuation adjustments should also be discounted, based on a pre-tax cost of capital discount rate, to address the differences between the net present value of the future tax implications from the current tax base versus the net present value of future tax implications based on its book value. In line with the literature we propose a pre-tax discount rate using the cost of capital or a pre-tax discount rate that is specifically applicable to the temporary difference (e.g. temporary differences from financial instruments). To illustrate the impact of the tax valuation adjustment approach for Tax-First differences we compare the current accounting for income taxes under IAS 12 against the proposed model using a regular acquisition of a machine.

Example 4: Comparison IAS 12 versus proposal for depreciation differences on property, plant and equipment

Entity A acquires a new machine for 1,000 that is tax deductible and has a useful life of 10 years. Entity A depreciates the newly acquired machine for tax purposes over a 5-year period and has earnings before income tax and the abovementioned transaction of 1,000 in each of the years presented. A tax rate of 25% applies in each of the years and the cost of capital for entity A is 10%.

	Entity A under IAS 12				Entity A under new approach			
Year	**PP&E**	**TVA PP&E**	**DTL**	**Net result**	**PP&E**	**TVA PP&E**	**DTA**	**Net result**
0	1,000	-	-	-	1,000	(190)	190	-
1	900	-	(25)	675	900	(171)	158	687
2	800	-	(50)	675	800	(152)	124	685
3	700	-	(75)	675	700	(133)	86	683
4	600	-	(100)	675	600	(114)	45	681
5	500	-	(125)	675	500	(95)	-	669
6	400	-	(100)	675	400	(76)	-	669
7	300	-	(75)	675	300	(57)	-	669
8	200	-	(50)	675	200	(38)	-	669
9	100	-	(25)	675	100	(19)	-	669
10	-	-	-	675	-	-	-	669

Under IAS 12 entity recognize PP&E for 1,000 and no deferred tax since there is no temporary difference. As from year 1 IAS 12 requires the build up of a deferred tax liability of 25 for the temporary differences that arises from the depreciation differences between the book and tax base. Starting in year 6 the deferred tax liability reverses based on the reversal of the temporary difference. Under the new approach the depreciable asset is separated into a carrying amount that is recovered through use and the amount that is recovered through the utilization of tax benefits for which a tax valuation adjustment is made to the carrying amount of the asset. The tax valuation adjustment accrual is based on the present value of the future tax benefits arising from the annual tax-deductible deprecation of 50 (1,000/5 years *25%) and equals to $50*(1-(1+10\%)^{-5})/10\% = 190$. The tax valuation adjustment accrual is recognized as a credit against the asset and a separate deferred tax asset is recognized to reflect to future tax deductions. Entity A net income under IAS 12 in year 1 is calculated as follows: income 1,000 minus depreciation of 100 (1,000/10 years) minus current tax (1,000-200)* 25% = 200 minus the change in the deferred tax liability of (900-800) *25% = 25 equals 675. Entity A net income under the new approach in year one is calculated as follows: income 1,000 minus depreciation of 100 (1,000/10 years) minus current tax (1,000-200)* 25% = 200 plus the change in the tax valuation adjustment accrual 19(190/10 years minus the change in the deferred tax asset (190-158) = 32 equals 687. In year six this is calculated as follows: income 1,000 minus depreciation of 100 (1,000/10 years) minus current tax 1,000* 25% = 250 plus the tax valuation adjustment accrual of 19 (190/10 years) equals 669. The net income of entity A under the new approach decreases in the first year since the interest component in the deferred tax asset is decreasing over time. In year 2 the interest component is 19 (190*10%) whereas in year 3 this is reduced to 16 (158*10%).

The example above shows that under the new approach the value of the assets takes into account how the income tax benefits are created rather than creating a deferred tax liability that does not relate to future tax cash flows. As part of this approach, entity A separately identifies the tangible assets and the tax valuation adjustment for the Tax-First temporary difference in relation to the depreciation (*valuation adjustment approach*). The tax valuation adjustment is based on the discounted value of the future tax amortization benefits amounting to 190 and deferred tax asset is recognized for the same amount to account for rights on future tax deductions. The tangible assets and the tax valuation adjustment accrual are amortized over the useful life of the assets and the deferred tax asset is realized through the tax depreciation that is included in the tax return. A significant point of critique on the valuation approach is that it presents the value of assets on a pre-tax basis and that the presentation in the income statement may be distorted. The tax valuation adjustment is however not a net of tax presentation but rather a valuation adjustment to reflect the utilization of tax benefits. Although the income statement is not part of the analysis, also the performance in the income statement can still be presented on a pre-tax and post tax basis[8]. We therefore do not recommend to implement the valuation approach for Tax-First differences in its purest form since this would possible create inconsistencies with other standards such as IAS 36 which requires for example that impairment assessments are performed on a pre-tax basis.

Also, from a conceptual perspective, it would be sound to align the requirements of recognising deferred tax assets and deferred tax liabilities with the definitions of assets and liabilities in the

[8] In year two entity A could for example present their net result of 687 as income of 1,000, depreciation cost of 100, interest income of 18 and income tax of total 231 with current tax of 200, a change in tax valuation adjustment of (-190--171) = -19 and a deferred tax expense of 50 (excluding interest). See also further analysis on p. 50 of the EFRAG and ASB discussion paper (2011).

Conceptual framework and the Exposure draft. The proposed model results in deferred tax assets and deferred tax liabilities that meet the definitions of assets and liabilities, since they relate to future tax cash flows. Although the new definitions of assets and liabilities in the Exposure draft do not have a probable cash flow requirement, the *Exposure Draft* acknowledges that, consistent with the partial allocation method, it may not be useful to recognize assets and liabilities in case there is a low probability of future cash flows. The recognition of a valuation adjustment reflects the future tax implications that are embodied in the underlying carrying amount of the assets and/or liabilities. The proposed model in addition addresses the second conceptual problem – having different recognition criteria for deferred tax assets and deferred tax liabilities – since the same probability is being used for deferred tax assets and deferred tax liabilities. Since the model would require discounting, it also addresses the controversial measurement topic that current IAS 12 ignores the time value consequences of the deferral of tax payments. Finally, the proposed model also eliminates the current exceptions in IAS 12, since the revised partial balance sheet approach for Book-First differences in combination with the valuation adjustment approach for Tax-First differences provides adequate outcomes to these situations. To demonstrate this, we again use the examples from Section 2 to demonstrate the outcomes under the new model. We start with the current exception that no deferred tax liability is recognised for a taxable temporary difference that arises upon the initial recognition of goodwill, and we use the same assumptions as in example 1.

Example 5: The application of the tax valuation adjustment approach on the initial recognition of goodwill

Entity A acquires all shares of entity X and recognises a goodwill amount of 1,000 that is not tax-deductible. As a

result, at initial recognition, a taxable difference of 1,000 arises. Entity B acquires all shares of entity Y and also has a goodwill amount of 1,000 that is tax-deductible. As a result, at initial recognition, no taxable difference arises. Entity B amortises goodwill for tax purposes over a 10-year period. Both entities have earnings before income tax and the abovementioned transaction of 1,000 in each of the years presented. A tax rate of 25% applies in each of the years and the cost of capital to both entities is 10%.

	Entity A				Entity B			
Year	**Goodwill**	**Goodwill TVA**	**DTL**	**Net result**	**Goodwill**	**Goodwill TVA**	**DTA**	**Net result**
0	1,000	-	-	-	1,000	(154)	154	-
1	1,000	-	-	750	1,000	(154)	144	765
2	1,000	-	-	750	1,000	(154)	133	764
3	1,000	-	-	750	1,000	(154)	122	763
4	1,000	-	-	750	1,000	(154)	109	762
5	1,000	-	-	750	1,000	(154)	95	761
6	1,000	-	-	750	1,000	(154)	79	759
7	1,000	-	-	750	1,000	(154)	62	758
8	1,000			750	1,000	(154)	43	756
9	1,000	-	-	750	1,000	(154)	23	754
10	1,000	-	-	750	1,000	(154)	0	752

Entity A does not recognize a deferred tax liability for the taxable Book-First temporary difference on goodwill because it is not likely that this will result in future tax payments. Entity B separately identifies goodwill and the tax valuation adjustment in relation to goodwill amortisation. The tax valuation adjustment accrual is based on the present value of the future tax benefits arising from the annual tax-deductible goodwill amortisation of 25 (1,000/10 years *25%) and equals to $25*(1-(1+10\%)^{-10})/10\%=154$. The tax valuation adjustment accrual is recognized as a credit against goodwill and a separate deferred tax asset will be recognized of 154. Entity A net income is 1,000 minus current tax 250 (1,000*25%) equals 750. Entity B net income in year 2 is 1,000 minus current tax minus current of (1,000-100)*25% = 225 minus the delta in the tax valuation adjustment of 10 (154-144) equals 765. The net income of entity B decreases over time since the interest component in the deferred tax asset is decreasing over time. In year 2 the interest component is 15 (154*10%) whereas in year 3 this is reduced to 14 (144*10%).

Example 5 shows that at the beginning of year 1, the balance sheets of entity A and entity B differ, because entity B has tax amortisation benefits that entity A does not have. Entity A's management has not recognised a deferred tax liability for the taxable temporary difference on

goodwill, because it is not likely that the Book-First taxable temporary difference will result in additional tax payments in the future(*partial method*). As part of the goodwill balance, entity B separately identifies goodwill and the tax valuation adjustment for the Tax-First temporary difference in relation to goodwill amortisation (*valuation adjustment approach*). The tax valuation adjustment accrual is based on the discounted value of the future tax benefits arising from the tax-deductible goodwill amortisation amounting to 154. Entity B at the same time recognizes a deferred tax asset for this amount in order to account for the future tax cash inflows from the tax amortization benefits, As a result, entity A and entity B present different net result in each of the years 1 to 10, because entity B recognises the benefit from the extra tax deduction that is offset by the decrease in deferred tax asset (tax amortisation benefit) and interest income that is embodied in the purchase price and, thus, the goodwill balance. Entity A does not have the tax deduction and did not pay for the tax-deductibility. At the end of year 10, entity A has a goodwill balance of 1,000, while entity B has a net goodwill position of 846 (1,000-154) owing to the consumption of the tax amortisation benefits by B. This reflects the fact that the goodwill paid by entity A fully reflected aspects such as synergies and workforce, while the price paid by entity B also reflected the future tax benefits of the tax amortisation and a lower value was attributed to synergies and workforce. After the tax benefits have been consumed by B, only the goodwill relating to the other aspects is left, resulting in a lower goodwill balance compared to A for which the entire goodwill paid was relating to those aspects. These outcomes are in line with the economic reality of the elements of the transaction, their values and their impacts on the entity's results. Based on the new model, there is no longer a need to have a specific exception for the recognition of a deferred tax liability on non-deductible goodwill, and the accounting follows the economic reality.

We used the initial recognition exception as another example that the current IAS 12 has conceptual problems. In example 6, we show the outcome using the new model, using the same assumptions as in example 2.

Example 6: The application of the initial recognition of assets outside a business combination

Entity A acquires all shares of entity X for 850 and recognises tangible assets (property, plant and equipment) as part of the purchase price allocation. The fair value of the tangibles assets, or the price paid in a taxable transaction (including tax amortisation benefits), would amount to 1,000. The value of entity X's tangible assets for tax purposes is nil in line with the book value of the previous owner. It is concluded that entity X is a business and goodwill is therefore recognised for the difference between the purchase consideration paid and the identifiable assets and liabilities, mainly relating to expected synergies. Entity B acquires all shares of entity Y for 850 and acquires similar tangible assets (PP&E) with a fair value of 1,000 (see A). A discount of 150 on the purchase price was agreed between entity B and the seller to structure the transaction as a non-taxable share sale instead of a taxable asset sale. The value of entity Y's tangible and intangible assets for tax purposes is nil. Since it is concluded that entity Y is not a business, no goodwill is recognised. The management of both entities will realise the full value of the asset through use, and both entities have earnings before income tax and the abovementioned transaction of 1,000 in each of the years presented. The acquired tangible assets are depreciated over a 10-year period, a tax rate of 25% applies in each of the years and the cost of capital for both entities is 10%.

	Entity A					Entity B				
Year	**PP&E**	**Goodwill**	**TVA PP&E**	**DTA**	**Net result**	**PP&E**	**Goodwill**	**TVA PP&E**	**DTA**	**Net result**
0	846	4	-	-		850	-	-	-	
1	762	4	-	-	665	765	-	-	-	665
2	677	4	-	-	665	680	-	-	-	665
3	592	4	-	-	665	595	-	-	-	665
4	508	4	-	-	665	510	-	-	-	665
5	423	4	-	-	665	425	-	-	-	665
6	339	4	-	-	665	340	-	-	-	665
7	254	4	-	-	665	255	-	-	-	665
8	169	4	-	-	665	170	-	-	-	665
9	85	4	-	-	665	85	-	-	-	665
10	0	4	-	-	665	0	-	-	-	665

As management of both entities intend to realise the fixed assets through use the taxable temporary difference between the book base and tax base will not result in any future tax payments. Therefore both entities do not recognize a deferred tax liability for this Book-First temporary difference. The fair value of the tangible assets of entity X, including the discounted tax amortisation equals 1,000 and the tangible asset is split in accordance with the valuation adjustment approach into a tangible asset of 846 and a tax valuation adjustment accrual of (25*(1-(1+10%)$^{-10}$) / 10%)=154. However, since the tax amortisation benefits do not exist, because this asset was acquired in a non-taxable transaction, an offsetting tax valuation adjustment accrual needs to be recognised that reverses the initial recognition of the hypothetical tax amortisation benefit. On balance, the tax valuation adjustment accrual is zero, and entity A only recognises the fair value of the tangible assets excluding any tax amortisation benefit.

Entity A also recognises goodwill of 4 for the difference between the fair value of the assets 846 and the consideration transferred 850, since it concluded that the acquired entity qualifies as a business. Entity A's management has not recognised a deferred tax liability for the goodwill temporary difference, because it is unlikely that it will result in future tax payments, for instance as a result of a future divestment of the assets and liabilities of this business. Entity B's accounting for the acquisition of entity Y is similar except that B recognises the discount (the difference between the price paid and the fair value of the assets) entirely against the carrying value of the asset, since the acquisition of Y did not qualify as a business. Entity A net income is calculated as follows: income 1,000 minus depreciation of 85 (846/10 years) minus current tax 250 (1,000* 25%) equals 665. Net income of entity B is calculated in the same way and before rounding slightly different as entity B due to higher depreciation (850/10 years).

Example 6 shows that both entities have recognised tangible assets that are not tax-deductible, since the assets are already fully depreciated for tax purposes. In accordance with the partial allocation method no deferred tax liabilities are recognized since there is no expected future tax outflow expected. Also no tax valuation adjustment accrual and deferred tax asset is recognized because both entities are not entitled to future tax amortization benefits. While there is a small difference in net equity and in net result in each of the years 1 to 10, this difference is not

because of the income tax accounting consequences, but rather that IAS 38 *Intangible assets* does not allow for goodwill to be amortised, but makes it subject to an impairment test under IAS 36 *Impairment of assets* whereas IAS 16 *Property, plant and equipment* requires that the carrying amount of PP&E be depreciated over the asset's useful life. Under the new model, it is therefore no longer necessary to have an initial recognition exemption, since the valuation adjustment approach and the partial allocation method provide the right principles.

Finally, current exceptions in IAS 12 in relation to outside basis temporary differences in which deferred taxes are not recognised when the reversal of the temporary difference is under the entity's control and the temporary difference is not expected to reverse in the foreseeable future are redundant in the new model. For any permanently invested retained earnings in investments in subsidiaries, a deferred tax liability does not need to be recognised if there is a low probability that the temporary differences will result in a future tax cash flow under the general principle that would apply to all situations of low probability of a future tax cash flow. Our proposal of the combination of the balance sheet approach for Book-First differences and the valuation adjustment approach for Tax-First differences, using the partial method and measured on a discounted basis, is not only supported by academic research and conceptually sound, it also addresses the current exceptions in IAS 12 that lack a theoretical basis as well as the other conceptual problems in IAS 12. Finally, the model would not result in a fundamental change to the current processes and systems that entities have implemented. The model still starts with a temporary differences approach that either results in deferred taxes or in tax valuation adjustment accruals in order to clearly differentiate between future tax cash flow consequences and valuation consequences. Second, as a whole, this model does not increase complexity. Although the discounting requirement increases complexity, in compensation, the removal of the various

exceptions reduces complexity. In addition, the proposed model no longer requires the recognition of deferred taxes for Book-First differences in case of a low likelihood that this will result in future tax payments. Also, we note that the burden of discounting predominantly relates to the Tax-First depreciation differences for which the tax valuation adjustment component in the price or value of the asset must be determined. For Book-First temporary difference, the need for discounting only exists in case the temporary difference is not already discounted itself. Thus, the proposed model is not only in accordance with the value relevance theoretical and empirical literature, and consistent with the current *Conceptual framework* and the *Exposure draft*, it will also result in more understandable information owing to the clear separation between deferred taxes that have future tax flow implication versus tax valuation adjustments that reflect the consumption of tax benefits or accelerated taxation of deferred income that are embodied in the underlying asset or liability.

6 Conclusion

In our view, the results of the academic literature on the value relevance of deferred taxes must find their way into the accounting standard-setting process. The empirical and analytical results indicate that something must change in order to make the current IFRS standard on income taxes (IAS 12) more value-relevant. Based on our analysis, we conclude that the leading principle for a new model for income tax accounting should be alignment to actual tax payments and tax receipts. Temporary differences should therefore be separated into Book-First differences that have future tax cash flow implications versus Tax-First differences that only have valuation implications. We conclude that for Book-First temporary differences, the balance sheet approach is most appropriate, while Tax-First differences are best accounted for by the valuation

adjustment approach. From our analysis of the literature, we also conclude that the partial allocation method should be reintroduced for deferred tax assets and liabilities. Deferred taxes should only be recognised when it is probable that they are expected to result in future tax payments and/or tax receipts. The partial allocation method will keep elements that are well supported by empirical research such as the recognition of deferred tax assets for carry-forward losses and/or tax credits based on probability. At the same time, a probability assessment would also apply to the deferred tax liabilities to balance the standard and make it consistent. Finally, deferred taxes should be discounted to reflect the time value of money so as to reflect economic reality and to be consistent with other standards. The mix between the balance sheet liability approach and the valuation adjustment approach combined with partial allocation and discounting would make the many exemptions in the existing model redundant. Thus, the proposed model results in deferred taxes that meet the definition of assets and liabilities, and empirical research results show that this approach provides value-relevant information to investors who, according to the *Conceptual framework* and the *Exposure draft*, are a key users of the financial statements.

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