



KATHOLIEKE  
UNIVERSITEIT  
LEUVEN

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**THE RECOGNITION OF AN ACCOUNTING  
PRACTICE AND ITS TIMING AS SIGNALLING  
TOOLS**

by

**A. GAEREMYNCK  
L. VAN DE GUCHT**

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## THE RECOGNITION OF AN ACCOUNTING PRACTICE AND ITS TIMING AS SIGNALLING TOOLS

A. Gaeremynck  
L. Van de Gucht

### Abstract

This paper extends the literature on the signalling function of accounting and financial information by investigating the information content of the adoption of a certain accounting practice, namely the recognition of deferred taxes in the financial statements. Specifically, we examine whether (1) the decision to recognise a certain accounting practice, and (2) the timing of the recognition supplement one another as signalling devices. The new accounting law on deferred taxes (Royal Decree of December 30, 1991) requires all Belgian firms to recognise deferred taxes for all grants on the balance sheet as of 30/12/91. The results show that the recognition and the timing of the recognition supplement one another as signalling tools. The immediate recognition of positive deferred taxes signals good news: firms that report positive deferred taxes typically perform better at the time of adoption and in the near future thereafter. Within the class of recognisers, early recognisers perform better than late recognisers. However, this second signal, the timing of the recognition is only used as a second signal for the class of tax-paying firms. Our findings also indicate that the impact on the balance sheet is a significant determinant of the decision to report deferred taxes. Firms where the adoption of deferred taxes would lead to a high increase in the debt/equity ratio are less likely to adopt, or, if they do report deferred taxes, do so later. These results suggest that firms decide not to recognise positive deferred taxes in order to limit the decrease in their solvency position. Indeed, firms that have already experienced a decline in their solvency position are more likely to postpone the recognition of deferred taxes.

## 1. Introduction

Until 1991, no deferred taxes for grants received were recognised in the financial statements of Belgian firms. This accounting method did not serve the true and fair view of the financial statements since grants received were fully recorded as equity although they were added to the taxable income over the life of the asset. To eliminate this violation of the true and fair view of the financial statements, the system of deferred taxes in the financial statements was introduced in Belgium with the Royal Decree of December 30, 1991.

Compared to the International Accounting Standard nr 12, the Belgian accounting law of 1991 recognises deferred taxes under fewer circumstances. Deferred tax assets can never be recognised in the financial statements. In the financial statements of 1991 deferred tax liabilities can be recognised only for grants received. From 1991 onward, they can also occur for surpluses on asset sales. As a better true and fair view of the financial statements is the main purpose of this change in the accounting law, it is not surprising that the deferred taxes should not only be recognised for new grants received after December 31 1991 but also for all grants booked on the balance sheet of 1991. Hence, the first possible recognition year is the same for all firms with grants reported on the balance sheet of 1991.

Since the introduction of the new accounting law on deferred taxes, firms must estimate the amount of taxes that are expected to be paid on the grants in the future. This means that at the moment of the receipt, investment grants are no longer fully recorded as equity, but should be divided between debt and equity using the expected future tax rate.

When the firms have doubts about the future profitability, they can decide not to book deferred taxes in the financial statements of 1991. If in later years the prospects become more favourable, the deferred taxes can be recognised at that time. The characteristics of the new law therefore introduce an extended adoption timing period for the recognition of deferred taxes in the balance sheet. When firms have doubts about their future tax paying ability, they can decide to postpone the recognition of deferred taxes at the latest until the asset is totally depreciated. This means that the recognition of deferred taxes as well as its timing are decision variables for the firm.

The situation with the possible recognition in different years is similar to the US where the FASB has established a policy of extending the adoption timing period for new standards (FAS nr 52; FAS nr 87 ;FAS nr 106). For example, FAS nr 106 allows a four year adoption timing period for the introduction of post-retirement liabilities other than pensions (Amir & Ziv, 1997b). In the period 1990-1994, firms had the choice to immediately recognise them, to disclose them in the footnotes or to not recognise them at all. The introduction of deferred taxes in Belgium has some similarities. Differently from the introduction of postretirement benefits in the balance sheet, firms have more discretion to recognise deferred taxes in the balance sheet as they must estimate the future tax paying capacity. A second difference is the length of the adoption timing period. Firms that have not already recognised deferred taxes in their financial statements must evaluate their future profitability position each year and decide whether to do recognise at that time.

The purpose of this study is two-fold. First, the particular characteristics of the new accounting law enables us to examine two areas in the signalling accounting literature: the signalling value of a certain accounting practice (Titman & Trueman, 1986; Hughes & Schwartz, 1988; Hughes et al., 1994; Bar-Yosef et al. 1995) and the information value of the adoption timing (Langer & Lev, 1993; Amir & Ziv, 1997a). The main question we investigate is whether the disclosure of positive deferred taxes and the timing of this disclosure supplement one another as signalling devices. The disclosure of positive deferred taxes is a reliable signal because the cost caused by the decrease in solvency, is larger for firms with negative inside information. Firms can further signal inside information by choosing the moment of recognition: immediately or in a later fiscal year. As both the recognition and its timing are decision variables for the firm when applying the new accounting rule on deferred taxes, we investigate whether they supplement one another as signalling devices.

The second purpose of this paper is to examine whether the decision to recognise positive deferred taxes is determined by its potential impact on the balance sheet. The income smoothing literature investigates how a firm can reach a sufficiently high and relatively stable income by choosing particular reporting practices. A question that is studied here, and which gets less attention in the literature, is whether a firm is concerned about abrupt changes in its balance sheet structure. The impact on the balance sheet structure can be an incentive either not to

value the deferred taxes in the balance sheet, or to postpone the application. While Langer and Lev (1993) laid the emphasis on earnings management to explain the immediate application of FAS nr87, this paper investigates the influence of balance sheet smoothing on the immediate recognition or postponement of positive deferred taxes.

Our results indicate that the recognition of deferred taxes and its timing supplement one another as signalling tools. As expected, the recognition of positive deferred taxes signals good news: firms that report positive deferred taxes typically perform better at the time of the recognition and shortly thereafter. When the signalling function is separately studied for tax paying and non-tax paying firms, the recognition of deferred taxes can only solve the asymmetry in information for the non-tax paying firms. Although the recognition of deferred taxes itself does not seem to act as a signalling device for the tax paying firms, the timing of the recognition can fulfil this role. Our results indicate that, of the tax-paying firms that report deferred taxes in their balance sheet, those that do so sooner perform better compared to those that report deferred taxes later. These results show that the decision and the timing supplement one another as signalling devices. In the group of well performing firms (i.e, tax-paying firms in the current period) most firms recognise positive deferred taxes and the timing decision of its recognition can solve the asymmetry in information, where very good news results in early recognition. Non-tax paying firms with favourable prospects do not need the second signal, the timing of the recognition, as a signalling device. The recognition of deferred taxes itself is able to solve the asymmetry in information about the future performance as the cost of imitation is too high for non-tax paying firms with negative inside information.

Our findings also indicate that the impact on the balance sheet is a significant determinant of the decision to report deferred taxes. Firms where the adoption of deferred taxes would lead to a high increase in the debt ratio are less likely to adopt, or, if they do report deferred taxes, do so later. These results suggest that some firms decide not to recognise positive deferred taxes in order to limit the negative impact on their solvency position. Indeed, we find that firms that have already experienced a decline in their solvency position are more likely to postpone the recognition of deferred taxes.

The paper is organised as follows. Section 2 clarifies the law on deferred taxes. Hypotheses are formulated in section 3 and the empirical results are reported in section 4. Section 5 concludes the paper.

## **2. The accounting law of deferred taxes**

Before the Royal Decree of 12/30/1991, deferred tax liabilities were not recognised under any circumstances in the Belgian accounting law. With the RD of 12/30/1991, the Belgian accounting law became to some extent in accordance with the International Accounting Standard nr 12 on income taxes.

IAS nr 12 is based upon the fundamental principle that a firm should recognise a deferred tax liability (asset) when a settlement would make future tax payments higher (smaller) than they would be if such settlement were to have no tax consequences (Par. 10). A deferred tax asset can occur when a firm has loss carry forwards or when different methods are used for tax and reporting purposes. A deferred tax liability occurs when a revenue is received or booked but is only added to the taxable income in future years (e.g. grants or revaluation of assets). The RD of 12/30/1991 did not allow the system of deferred taxes in all these cases. The recognition of deferred tax assets because of loss carry forwards is totally prohibited because of prudence and doubts about the realisation. Furthermore, temporary differences because of different accounting methods for tax and reporting methods do not occur as the same annual statements are used for both fiscal and reporting purposes. For example, firms that use accelerated depreciation for reporting purposes must also use accelerated depreciation for tax purposes. Finally, the RD 12/31/1991 does not allow deferred tax liabilities in as many cases as the IAS NR 12 (e.g. the revaluation of assets); they are only allowed for grants received and surpluses on asset sales.

When the deferred taxes has be estimated at the time the grants are received or the surpluses on the asset sale is realised, the RD also demands to use the liability approach of the IAS NR 12 (par. 51). This means that not the current but the future expected tax rate is relevant for the valuation of deferred taxes in the balance sheet. Hence, deferred taxes must reflect the tax consequences that would follow from the manner in which the enterprise expects at the balance sheet date to settle the amount

of its liabilities. When earnings' forecasts are unfavourable, the firm will not recognise deferred taxes in the balance sheet as taxes are not expected to be paid in the future. If at a later date the firm expects better results than before, the true and fair view of the financial statements demands that deferred taxes are recognised at that time.

We note that the treatment of deferred taxes in the tax and the accounting law differs between investment grants and surpluses on asset sales. Since grants received for investments in fixed assets are credited directly to equity, the corresponding deferred taxes are also immediately charged to equity (IAS NR 12, par 61-65). The deferred taxes for surpluses on asset sales are charged to the income statement as a transfer to the deferred taxes since the surplus itself is recorded in the income statement. Furthermore, the moment of introduction for the new accounting law differs in both situations. According to the RD of 12/30/1991, the system of deferred taxes must be recognised for all grants that occur on the balance sheet of the year 1991 (Art 8 §5 RD12/30/1993), while the system of deferred taxes for surpluses realised on asset sales must be recognised only for assets sold after 12/30/1991.<sup>1</sup> This means that deferred taxes on grants received already occur in the financial statements of 1991, while they only occur for surpluses on asset sales for the financial statements of 1992. Finally, while the firm can choose between immediate or postponed taxation for surpluses on asset sales, immediate taxation can never occur for investment grants. When the firm realises a surplus on an asset sale, it is impossible to deduce from the financial statements whether the firm (a) deters from using the system of deferred taxes, or (b) chooses this system for tax purposes but does not book deferred taxes in the financial statements. However, for grants received no such choice exists in the fiscal law: all firms must use the system of deferred taxes for tax reasons while they may choose whether or not to book the deferred taxes in the financial statements. The different accounting treatment for deferred taxes on surpluses of asset sales and investment grants received enables us to identify whether deferred taxes apply to grants received or to surpluses on the sale of assets. We limit our study to the system of deferred taxes for grants received because immediate taxation can never occur for

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<sup>1</sup> The system of deferred taxes is not obliged for the surpluses realised on the sale of assets before 12/31/1991 because the D/E ratio was expected too decrease to much for most firms.

investment grants and because firms have the discretion whether or not to book the deferred taxes related to investment grants in the financial statements.

The recognition of deferred taxes and its timing offers interesting area for research. It will be investigated in the next section.

### 3. Hypotheses

#### Firm performance

The recognition of positive deferred taxes requires firms to estimate the probability that taxes on the grants received will be paid in the future. As taxes are only paid when the firm performs well (e.g., reports positive taxable income), positive deferred taxes can fulfil a signalling function. Contrary to other signals [i.e., the choice of inventory method (Hughes & Schwartz, 1988); the percentage of the inventory valued by FIFO (Hughes et al., 1994); the inventory method together with the debt level (Bar-Yosef et al., 1995) and the auditor (Titman & Trueman, 1988)], the choice of a deviating behaviour is not a positive but a negative signal. Firms choose not to report deferred taxes in the balance sheet when they expect not to pay taxes in the future. For those firms, the signalling cost of the recognition is too high: the solvency may fall below an acceptable level and debt covenants may be violated, requiring renegotiations with creditors now or in the future. Hence the following hypothesis:

*H1: Firms that report deferred taxes in the balance sheet tend to outperform the non-recognisers in the future.*

Likewise, the timing decision can provide a signal. The better the inside information, the more likely taxes will be paid and the earlier firms will recognise positive deferred taxes. If a firm recognise earlier, the amount of grants transferred from equity to debt is larger, thereby increasing the probability of debt covenant violations. Hence the following hypothesis:

*H2: Early recognisers tend to outperform the late recognisers in the future.*



However, the probability that taxes on grants received will be paid depends not only on the expected future performance, but also on the current performance and on the existence of loss carry forwards.<sup>2</sup> If the firm does not report positive profits in the current or past year, loss carry forwards can result in non-positive payable taxes in the future, even with improved future performance. Hence, the presence of loss carryforwards and current performance are added as control variables in the analyses.

#### Impact on the balance sheet

The firm's recognition decision may also be determined by the impact on its balance sheet structure over time. Since a part of equity (grants received) is classified as debt (deferred taxes), the new accounting law induces an increase in the debt ratio, thereby increasing the estimated financial risk and the probability of debt covenant violations. The compliance costs of positive deferred taxes can therefore be: an increase in capital costs, debt contract renegotiations, a lower price for new shares or debt issued, ... The assessment of those compliance costs is a difficult task. Since information about the nature and the violation of the debt covenants is not publicly available for the sample used in this study, other proxies for the size of these compliance costs must be used. We use the debt ratio and the size of the investment grants to estimate the size of these compliance costs,<sup>3</sup> which gives the following hypothesis:

*H3: Firms that report deferred taxes in the balance sheet tend to have better solvency ratios in 1991 compared to non-recognisers.*

*H4: Firms that report deferred taxes in the balance sheet tend to receive smaller investment grants in 1991 compared to non-recognisers.*

The timing decision is also expected to be influenced by the solvency position and the size of the grants received. Firms that recognise earlier are expected to have a

<sup>2</sup> Although the current tax rate can be used as a proxy for the valuation of deferred taxes, the current tax rate cannot be introduced in the analysis since the signalling value of the deferred taxes is tested for both non-tax paying and tax paying firms.

<sup>3</sup> In the recent literature, the proxy is replaced by information about the violation of the debt covenants (see e.g., Defond & Jiambalvo, 1994). Information on debt covenant violations is not publicly available in an European context, however, since disclosure in the financial statements of this information is not required.

stronger pre-recognition balance sheet structure. Firms that postpone the recognition have more time to improve the balance sheet structure, by building up retained earnings, for example. The improved debt ratio at that time makes it possible to show positive deferred taxes at a lower cost. The size of the grants received will only strengthen this effect. As the grants received are larger, the probability of debt covenant violation increases and encourages firms to postpone the recognition of positive deferred taxes. This results in the following hypotheses:

*H5: Early recognisers tend to have better solvency ratios in 1991 compared to late recognisers.*

*H6: Early recognisers tend to receive smaller investment grants compared to late recognisers.*

Firms are concerned not only about the current debt ratio and current annual income, but also about the changes in the income and debt levels over time. Managers may attempt to smooth the income level by limiting the variance in the reported income over time (Langer & Lev, 1993). This goal can be reached by transferring income between current to future periods. The recognition of deferred taxes in the financial statements cannot be used as a tool to influence the reported income since the earnings after taxes are not affected. However, managers can limit the variance in the debt ratio through the recognition (or the lack thereof) of the deferred taxes in the balance sheet. In other words, managers may be concerned about smoothing the debt ratio. For example, firms that increased their debt ratio shortly before or during the 1991 fiscal year may decide not to book deferred taxes limit the further decline in the solvency position. However, given a certain change in the solvency position compared to the previous period, firms can also try to limit the variance or/and the increase in the debt ratio in the future. The firm has private information about the investment plans, the expected results and the expected changes in the financial structure in the future. If large investments are planned, the solvency position will probably deteriorate and the firm can decide not to book deferred taxes. As certain costs ( such as write-offs, depreciation,...) cannot be recognised in the financial statements to reach a certain income level, deferred taxes cannot be valued in the balance sheet to avoid a too high increase in the debt level. Hence, while pre-1991

increases in the debt ratio are likely to influence both the recognition of deferred taxes and the timing thereof, we argue that planned future increases in the debt ratio are not expected to influence the timing decision. If the firm recognises deferred taxes now or in the future, the final solvency position will be the same. This results in the following hypotheses:

*H7: Recognisers tend to experience a smaller pre-1991 decline in the solvency ration compared to non-recognisers.*

*H8: Early recognisers tend to experience a smaller pre-1991 decline in the solvency ration compared to late recognisers.*

*H9: If the firm's solvency position is expected to deteriorate in the near future, it does influence the recognition but not the timing decision of positive deferred taxes.*

Evidence in support of these hypotheses, would suggest that firms are concerned not only about the current solvency position but also about the changes in the solvency position over time.

#### Other control variables

Next to the signalling and the balance sheet smoothing arguments, firm size can also be a determinant in the firm's recognition decision. As large firms are more likely to keep abreast of changes in accounting practices and regulations, large firms are more likely expected to show deferred taxes in the balance sheet and they do it earlier. However, the size variable does not test whether the financial statements are verified by an independent auditor.<sup>4</sup> Even if a firm is ignorant about changes in the accounting law, the auditor can inform the firm about these changes and can insist on applying the new accounting law.<sup>5</sup> Hence, the presence of an independent auditor may positively influence the recognition decision.

<sup>4</sup> Even if the financial statements are verified by an independent auditor, the firm has private information about the future expected profits and he possesses discretion to give this information to the auditor or not.

<sup>5</sup> The financial statements must be verified by an independent auditor when two of the three criteria are violated: turnover > 4.958.704 euro, total assets > 2.478.935 euro and number of employees > 50. If the number of employees > 100 then the financial statements must always be verified by an independent

Table 1 summarises the hypotheses and clarifies the explanatory variables with the hypothesised signs.

**Table 1: Hypotheses for the recognition and timing decisions related to the reporting of deferred taxes in the balance sheet**

Hypotheses and Variables	Empirical proxies	Expected influence on	
		recognition	timing
<b>Performance</b>			
H1,H2: future performance	$a\Delta ROE_{51} = \sum_{i=91}^{95} \frac{(ROE_{(1+i)} - ROE_i)}{\text{abs}(ROE_i)} / 5$ <p>average change in return on equity for the period 1991-1995<sup>6</sup></p>	+	+
H1,H2: future performance	dp9495=1 when the profits in 1994 and 1995 are both positive, =0 otherwise <sup>7</sup>	+	+
Control variable: Current performance	$ROE_{91} = \frac{\text{profits}_{91}}{(\text{equity}_{91} + DT_{91})}$ <sup>8</sup>		
Control variable: Loss carry forwards	d1cf=1 if loss carry forwards occur on the balance sheet of 1991; =0 otherwise <sup>9</sup>		
<b>Balance sheet structure</b>			
H3,H5: solvency in 1991	$\text{Debt}/TA_{91} = \frac{\text{debt}_{91} - DT_{91}}{TA_{91}}$	-	-
H4,H6: size of investment grants in 1991	$\text{grant}_{91} = \frac{\text{grants}_{91} + DT_{91}}{TA_{91}}$	-	-
H7,H8: current change in solvency	$\Delta \text{debt}_{9091} = \frac{(\text{Debt}_{91} - DT_{91})/TA_{91} - (\text{Debt}_{90} - DT_{90})/TA_{90}}{(\text{Debt}_{90} - DT_{90})/TA_{90}}$	-	-

auditor even if the other two criteria are not violated. Whether a firm is publicly held or not does not influence whether an auditor is required or not.

<sup>6</sup> We have measured the independent variables as if no firm recognises deferred taxes. This means that equity = equity + deferred taxes .

<sup>7</sup> The future performance is measured by a dummy variable (dp9495) and by the change in performance (aΔROE51). By introducing those two variables, the strenght of the recognition and its timing as signalling devices is tested. It can be investigated whether the recognition or its timing informs not only the profitability or not but also about the level of profits in the future.

<sup>8</sup> DT= Deferred taxes

<sup>9</sup> A firm can pay taxes on the current year income and still have loss carry forwards. Not under all circumstances can losses be carried forward for tax purposes. As the financial statements are the same for reporting and tax purposes and not all expenses are tax deductible, firms with accounting losses and negative retained earnings may still pay taxes in the current period.

H9: expected future change in solvency	$a\Delta\text{debt}_{i1995} = \sum_{i=91}^{95} \left( \frac{(\text{Debt}_{i+1} - \text{DT}_{i+1})/\text{TA}_{i+1} - (\text{Debt}_i - \text{DT}_i)/\text{TA}_i}{(\text{Debt}_i - \text{DT}_i)/\text{TA}_i} \right) / 5$		
<b><i>Other control variables</i></b>			
firm size	size=Log(total assets)		
auditor	dauditor =1 if financial statements are audited, =0 otherwise		

Note that when the empirical proxies for the different hypotheses are defined, the influence of the chosen reporting policy is eliminated. This means that the financial ratios are determined as if firms do not recognise deferred taxes. Hence, the amount of equity is measured as the sum of equity and the deferred taxes, while debt is defined as the difference between total debt and deferred taxes. The income statement variables are not affected since the choice of deferred taxes does not affect income after taxes.

## 4. Empirical results

### 4.1 Sample selection

We restrict the sample to Belgian firms that are active in those industries where high investments in fixed assets and thus the receipt of investment grants are most likely to occur: the chemical, mechanical and building industry. From these industries, all firms that reported grants on the balance sheet of 1991 were retained (the new accounting law on deferred taxes applies only to firms with grants on the balance sheet as of 1991). As the new accounting law is only relevant for annual reports published after 30 December 1991, positive deferred taxes could only occur from that date onward. As already mentioned in the previous section, the new accounting law applies to all grants booked on the balance sheet of 1991. That means that the first possible recognition date is the same for all firms. Table 2 describes the final sample. Of the total sample of 641 firms, 409 firms report positive deferred taxes for the first time in 1991 or 1992. The firms that recognise deferred taxes in 1991 are referred to as the early recognisers; the others recognisers are classified as late recognisers. Of the total sample, 213 firms pay no taxes in 1991. Of the 428 tax paying firms, 332 (77.57%) firms disclose deferred taxes for the first time in the

balance sheet in 1991 (254) or 1992 (78). A minority of non-tax-paying firms (77 or 36.15%) record deferred taxes for the first time in the balance sheet in 1991 (49) or 1992 (28).<sup>10</sup> Of the 641 firms, 185 firms belong to the chemical industry, 396 to the machinery industry and 61 to the building industry. The average size of the grants received is 469609 EURO, which is 1.072 % of the total assets.

To test the hypotheses concerning the determinants of the recognition decision, accounting data over the period 1991-1995 was collected for all sample firms.

**Table 2: The introduction of deferred taxes in the balance sheet for the first time**

	Recognisers		Non-recognisers <sup>11</sup>	Total
	1991	1992		
All firms	303	106	232	641
Tax paying firms	254	78	96	428
Non-tax paying firms	49	28	136	213

#### 4.2 Univariate results

Before presenting the multivariate results, some characteristics of the financial variables and some univariate results are shown in Table 3. The purpose is to identify differences between firms with and without positive deferred taxes (Table 3a), and

<sup>10</sup> If deferred taxes are identified in the balance sheet of 1991, these deferred taxes must apply to grants received since the system of deferred taxes for surpluses on asset sales is only introduced from January 1, 1992 on. Even if the firm uses the system of deferred taxes for the first time in 1992, it is still possible to identify whether the deferred taxes apply to the grants received or to the surpluses on the sale of assets or both. Since the grants received for investments in fixed assets are directly credited to equity, the deferred taxes should be charged directly to equity (Par 61-65 IAS nr12), while the income statement is used to book the transfer to deferred taxes on the surpluses of the sale of assets. If the transfer to deferred taxes in the income statement equals zero in the first year the deferred taxes are booked, the deferred tax liabilities only apply to the grants received. If the sum of the deferred taxes in the balance sheet and the withdrawals in the income statement equal the transfer to deferred taxes in the income statement, the deferred taxes only apply to the surpluses on asset sales. If the deferred taxes in the balance sheet are larger than the transfer to deferred taxes in the income statement, the firm then applies the system of deferred taxes for both grants and surpluses on asset sales. Finally, a situation can occur where the deferred taxes in the balance sheet are smaller than the transfer to deferred taxes in the income statement. If the sum of the deferred taxes in the balance sheet and the withdraws in the income statement equals the transfer to deferred taxes, surpluses on the asset sales only occur. If this condition is not fulfilled, the deferred taxes apply to both situations.

<sup>11</sup> The initial sample exists of 692 firms. 51 firms are eliminated from the sample of non-recognisers as they book deferred taxes for the first time in 1993 (26), 1994 (20) or 1995 (5). This means that the final group of non-recognisers exists of firms that did not report positive deferred taxes in 1991-1995.

differences between early and late recognisers (Table 3b). The non-parametric Wilcoxon test is used to test for significant differences.

**Table 3a: A comparison of recognisers vs. non-recognisers: the univariate results**

Variable	mean value for the recognisers (n=409)	mean value for the non-recognisers (n=232)	p-value
aΔROE51 (H1,H2)	-0.8719	-1.2910	0.4581
dp9495 (H1,H2)	0.7017	0.5603	0.0003
Debt/TA91 (H3,H5)	0.5873	0.6482	0.0012
grant91 (H4,H6)	0.0101	0.0125	0.4332
Δdebt9091 (H7,H8)	-0.0092	-0.0063	0.5667
aΔdebt9195	0.01566	0.02850	0.5926
<i>Control variables</i>			
ROE91	0.1431	-0.1813	0.0001
dlcf	0.9340	0.7155	0.0001
size	13.2506	12.8230	0.0009
auditor	0.9584	0.8405	0.0001

**Table 3b: A comparison of early vs. late recognisers: the univariate results**

Variable	mean value for the early recognisers (n=303)	mean value for the late recognisers (n=106)	p-value
aΔROE51 (H1,H2)	-0.8489	-0.9377	0.9966
dp9495 (H1,H2)	0.7261	0.6320	0.0691
Debt/TA91 (H3,H5)	0.5861	0.5906	0.9084
grant91 (H4,H6)	0.0165	0.0085	0.7065
Δdebt9091 (H7,H8)	-0.0254	0.0371	0.0137
aΔdebt9195	0.0176	0.0101	0.9893
<i>Control variables</i>			
ROE91	0.1605	0.0934	0.8700
dlcf	0.9472	0.8962	0.0694
size	13.3424	12.9882	0.0131
auditor	0.9636	0.9434	0.3680

The univariate results suggest that the future performance influences the recognition and its timing. Recognisers (dp9495,  $p=0.0003$ ) and early recognisers ( $p=0.0691$ ) perform significantly better in the future compared to non- and late recognisers. Although the existence of profits differs between the groups, the average change in performance does not differ significantly, neither for the recognition (aΔROE51,  $p=0.4581$ ) nor for the timing decision ( $p=0.9966$ ). In addition,

recognisers and early recognisers have significantly less loss carry forwards ( $0.9340 > 0.7155$  with  $p=0.0001$  for the recognition decision and  $0.9472 > 0.8962$  with  $p=0.0694$  for the timing decision).

Next to performance, the balance sheet structure significantly differs significantly across the different groups of firms. In 1991, non-recognisers have significantly higher debt ratios than recognisers ( $p=0.0012$ ). However, the debt ratio cannot discriminate between early and late recognisers ( $p=0.9084$ ). The average amount of grants received does not significantly differ between recognisers and non-recognisers ( $p=0.4332$ ), nor between early and late recognisers ( $p=0.7065$ ). While the average change in solvency in the current year is not significantly different between recognisers and non-recognisers ( $\Delta \text{debt} 9190$ ,  $p=0.5667$ ), it is for the timing decision. While early recognisers improve their solvency position ( $-0.0254$ ), late recognisers have increased their debt ratio ( $0.0371$ ) and this difference is statistically different ( $p=0.0137$ ). The future change in the debt ratio does not significantly affect the recognition ( $p=0.5926$ ) nor the timing decision ( $p=0.9893$ ).

With respect to the remaining control variables we find the following results. Return on equity in 1991 is significantly larger for recognisers than for non-recognisers ( $p=0.0001$ ), but is not significantly different between early and late recognisers ( $p=0.8700$ ). As expected, recognisers are significantly larger than non-recognisers (size,  $p=0.0009$ ). In addition, early recognisers tend to be larger than late recognisers ( $p=0.0131$ ). Finally, the hypothesis of audited financial statements is also confirmed. Recognisers are significantly more likely to have an auditor ( $p=0.0001$ ), while early recognisers are not significantly more likely to have an auditor than late recognisers ( $p=0.3680$ ).

## 4.3 Multivariate results

### 4.3.1 The general model

In the multivariate analysis, the joint impact of the independent variables on the recognition and timing decisions is tested. First, the recognition decision will be examined. Equation (1) gives the general model, which explains the occurrence of deferred taxes in the balance sheet for the entire sample of tax paying and non-tax paying firms. The dependent variable for this logistic regression DR is equal to one if deferred taxes are reported for the



first time in 1991 or 1992 (the recognisers) and equal to zero otherwise (the non-recognisers).

The general expression for the model is:

$$DR = \alpha_0 + \alpha_1 a\Delta ROE_{91} + \alpha_2 dp_{9495} + \alpha_3 Debt/TA_{91} + \alpha_4 grant_{91} + \alpha_5 \Delta debt_{9091} + \alpha_6 a\Delta debt_{9195} + \alpha_7 ROE_{91} + \alpha_8 dlcf + \alpha_9 size + \alpha_{10} dauditor + \xi \quad (1)$$

Second, given that firms recognise positive deferred taxes, the timing decision is studied. In this case, the dependent variable in model (1) is replaced by DT, which is equal to one if recognition occurred in 1991 and equal to zero if recognition occurred in 1992. The results of these estimations are reported in Table 4.

**Table 4: Multivariate analysis of the recognition and timing decision for the full sample**

	Recognition decision (n=641; p=0.0001)		Timing decision (n=409; p=0.0103)	
	Coefficient	p-value	coefficient	p-value
Intercept	-3.745	0.0001	-2.6674	0.0256
<i>Performance</i>				
aΔROE51	-0.00171	0.8805	-0.0093	0.5977
dp9495	+0.5530	0.0059	+0.5342	0.0468
<i>Balance sheet</i>				
Debt/TA91	-1.4275	0.0068	+0.3356	0.6210
grant1	+5.6993	0.3208	+13.5570	0.1323
Δdebt9091	+0.5874	0.2362	-1.5041	0.0240
aΔdebt9195	-1.3014	0.1047	+1.3851	0.4015
<i>Control variables</i>				
ROE91	+1.0165	0.0015	+0.3785	0.3780
dlcf	+1.5158	0.0001	+0.7914	0.0980
size	+0.1589	0.0155	+0.1437	0.0756
dauditor	+1.5466	0.0001	+0.3459	0.5429

#### The recognition decision

The results of the recognition decision give some support for the signalling and the balance sheet smoothing hypotheses. The coefficient of dp9495 (p=0.0059) is positive and significant, as expected. This finding suggests that firms with positive future profits are more likely to report deferred taxes in their balance sheet. The

coefficients of the control variables ROE91 ( $p=0.0015$ ) and dlcf ( $p=0.0001$ ) are also positive and significant. Hence, firms with favourable private information about the future profitability, good news in the current period and no loss carry forwards are more likely to book positive deferred taxes in the balance sheet.

However, an improvement in the performance over the period 1991-1995 does not significantly encourage firms to book deferred taxes in the balance sheet ( $p=0.8805$  for  $\Delta ROE51$ ). This finding suggests that the recognition of positive deferred taxes is limited: it informs the users of the financial statements whether the firm will be profitable in the future (as measured by  $dp9495$ ), but not about the level of future profits (as measured by  $\Delta ROE51$ ).

With respect to the balance sheet smoothing hypothesis we find the following. The coefficient of Debt/TA91 is negative and highly significant ( $p=0.0068$ ), indicating that firms with weak solvency positions are less likely to report positive deferred taxes. Thus, firms with high debt levels want to avoid a further increase in their debt ratio. However, consistent with the univariate results, the change in the debt structure in 1991 is statistically insignificant in explaining positive deferred taxes ( $p=0.2362$  for  $\Delta debt9091$ ). Indeed, as reported in table 3, the mean for both groups is close to zero, which is consistent with firms in general maintaining a stable capital structure. The change in the future debt structure over time also seems to explain the recognition decision. The coefficient of  $\Delta debt/TA9195$  is negative and marginally significant at a 10% level ( $p=0.1047$ ), suggesting that firms take into account the change in their expected future solvency position when making their recognition decision.

The impact of the grant size is not statistically significant in explaining the recognition decision ( $p=0.3208$ ). A potential explanation for this result is that there are two opposing forces at work. According to H4, firms with larger investment grants are less likely to book deferred taxes because of the large impact on the balance sheet structure. However, as the size of the investment grant increases, the influence of the new accounting law on the true and fair view of the financial statements is larger. Adherence to this view should encourage the recognition of deferred taxes. Hence, the net impact may be insignificant.

With respect to the remaining control variables we find that larger firms are statistically more likely to book deferred taxes ( $p=0.0155$ ), as expected. Finally, the

presence of an auditor significantly increases the likelihood of recognition ( $p=0.0001$ ). This finding demonstrates that an auditor can improve the quality of the financial statements.

The results so far indicate that both firm performance and the potential impact on capital structure affect the decision to recognise positive deferred taxes in the balance sheet at the moment the accounting law on deferred taxes was introduced in Belgium. Some moderate evidence results are found for the balance sheet smoothing hypothesis and for the signalling hypothesis: the variable  $a\Delta\text{debt}_{51}$  is only marginally significant and the variable  $a\Delta\text{ROE}_{51}$  is not significant.

### *The timing decision*

In columns 4 and 5 of Table 4 we examine whether the timing of the recognition decision also provides information. Of all the recognisers, 303 firms introduce positive deferred taxes in 1991 (the early recognisers) and 106 firms recognise them for the first time in 1992 (the late recognisers). The results suggest that the timing can also provide information about the future performance. Two of the four variables that test the tax paying ability are statistically significant: the existence of profits ( $dp9495$ ,  $p=0.0468$ ) and the absence of loss carry forwards ( $p=0.0980$ ). These findings suggest that early recognisers have performed better in the past and continue to do so in the future. However, the signalling value of the timing decision is limited as the variable  $a\Delta\text{ROE}_{51}$  is not significant ( $p=0.5977$ ), which we also found for the recognition decision. As the variable  $dp9495$  is significant for the disclosure as well as for the timing decision, evidence is found that the disclosure and the timing decision supplement one another as signalling devices. Unlike for the recognition decision, the current performance does not explain the timing decision ( $p=0.3780$  for  $\text{ROE}_{91}$ ).

Different results for the recognition decision and its timing are also found for those variables that test the balance sheet smoothing hypotheses. While the decision to recognise is significantly influenced by the debt level and the future change in capital structure, the timing decision is significantly affected only by the current change in the debt ratio. Given that firms recognise either in 1992 or 1991, the decision is more likely to be postponed to 1992 for firms that have already experienced a high increase in debt in the period 1991-1990 ( $=0.0240$ ). If the

solvency position of the firm gets worse, the firm can limit the decrease in the solvency position by not transferring a part of the grants received to the deferred taxes in 1991 and wait until 1992. On the contrary, consistent with the hypotheses, the long-run change in the future debt ratio does not affect whether recognition occurs in 1991 or 1992 ( $p=0.4015$ ) as the decision to recognise cannot affect the solvency position in the long run. A last difference between the recognition and the timing decision, is the insignificance of the debt level in 1991 for the timing decision ( $p=0.6210$ ). Whether the firm applies in 1991 or 1992, the debt level is the same at the end of 1992. Therefore, both 1991 and 1992 recognisers will have a relatively low debt ratios in 1991, which does not differ a lot between the two types of recognisers. As we found for the recognition decision, the size of the grant is not a significant determinant of the timing decision ( $p=0.1323$ ). Here again, the impact upon the true and fair view of the financial statements seems to play an offsetting role. Finally, as hypothesised, larger firms apply the new accounting law earlier ( $p=0.0756$ ).

The results of the analyses show that the recognition and its timing both fulfil a signalling role. Firms with positive inside information differentiate themselves from the others by recognising positive deferred taxes. They are prepared to face an increase in the debt ratio as favourable prospects limit the chance of debt covenant violation. However, the significance of the future performance in the timing decision suggests that the recognition of deferred taxes is not always sufficient as a signalling device. If many firms recognise positive deferred taxes, the recognition can only solve the asymmetry in information between firms with very bad and better prospects. A second signal, the timing of the recognition, seems to be necessary to solve the remaining asymmetry in information between firms with moderate and good prospects. In the next section, we investigate under which circumstances this second signal is used.

### **4.3.2 The sample of tax paying and non-tax paying firms**

In the previous section the signalling function is studied for the entire sample. It is shown that firms with positive inside information recognise positive deferred taxes and firms with negative information withhold from booking deferred taxes. Within the group of well performing firms, firms with better news further discriminate

by showing the positive deferred taxes earlier. The question is whether this second signal, early recognition, is necessary in all circumstances. As equity is transferred to debt, the solvency position gets worse and debt covenants can possibly be violated. For firms that recognise at a larger date, the amount transferred from equity to debt is smaller and the probability of debt covenant violation is smaller.<sup>12</sup> As a result, early recognition results in a further increase of the signalling cost. It is expected that this second signal will only be used when the recognition itself is not able to solve the asymmetry in information. A possible reason could be a too low difference in the cost of showing deferred taxes. As tax paying firms usually have better solvency positions than non-taxpaying firms, this is more likely to occur for the tax paying firms. Therefore, we expect that the timing of the introduction is more likely to have a supplementary signalling role for the tax paying than for non-tax paying firms.

To test this hypothesis, the sample is split in two subsamples: firms that do pay taxes in 1991 and firms that do not pay taxes in 1991.<sup>13</sup> As table 1 shows, 73.45% of the tax paying firms recognise positive deferred taxes while only 31.95 of the non-tax paying firms recognise positive deferred taxes. Of the tax-paying recognisers, 76.51% recognise in the first year, compared to 63.63% of the non-tax paying recognisers. Table 5a reports the results for the subsamples of tax paying firms while table 5b reports the results for the subsample of non-tax paying firms.

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<sup>12</sup> As grants received are booked as a revenue over the life of the asset, the amount of grants received in the balance sheet decrease over the life of the asset. If a firm postpones the recognition of deferred taxes, the amount transferred from debt to equity becomes smaller.

<sup>13</sup> The variable *Dauditor* is not introduced in the subsample of tax paying firms as the financial statements of all these firms are verified by an independent auditor.

**Table 5a The multivariate results for the recognition and its timing for the subsample of tax-paying firms**

	Recognition decision for the tax paying firms (n=428, p=0.0001)		Timing decision for the tax paying firms (n=332, p=0.0309)	
	Coefficient	p-value	Coefficient	p-value
intercept	3.1136	0.0399	-2.9651	0.1184
<b>Performance</b>				
aΔROE51	+0.0159	0.2909	-0.0034	0.9867
dp9495	+0.0166	0.9501	+0.6688	0.0248
<b>Balance sheet</b>				
Debt/TA91	-1.4001	0.0577	+0.6436	0.4068
grant91	+4.5558	0.5662	+13.325	0.2824
Δdebt9091	-0.1814	0.7978	-1.3958	0.0905
aΔdebt9195	-3.0096	0.0344	+0.3196	0.8631
<b>Control variables</b>				
ROE91	+1.6265	0.0310	-0.6195	0.2708
dlcf	+1.2267	0.0742	-0.2692	0.8199
size	+0.2963	0.0018	+0.2715	0.0078
auditor	–	–	–	–

**Table 5b The multivariate results for the recognition and its timing for the subsample of non-tax paying firms**

	Recognition decision non-tax paying firms (n=212, p=0.0003)		Timing decision non-tax paying firms (n=77, p=0.0385)	
	Coefficient	p-value	Coefficient	p-value
intercept	-2.5508	0.0572	+1.2389	0.6088
<b>Performance</b>				
aΔROE51	-0.0290	0.1181	-0.1100	0.1692
dp9495	+1.2906	0.0006	+0.6054	0.4556
<b>Balance sheet</b>				
Debt/TA91	-1.4406	0.0904	+1.0328	0.5912
grant91	+10.4589	0.1955	+25.322	0.1211
Δdebt9091	+0.8613	0.2144	-2.7054	0.0494
aΔdebt9195	-0.1495	0.8608	+3.7689	0.3788
<b>Control variables</b>				
ROE91	+0.5445	0.0725	+1.2155	0.3497
dlcf	+0.8036	0.0388	+1.2610	0.0956
size	+0.0537	0.6176	-0.3046	0.1248
Dauditor	+1.0043	0.0432	+1.1918	0.1968

The results for the recognition and timing decision for the tax-paying firms are similar to those obtained for the entire sample. A first difference is that for the tax paying firms, only the timing decision fulfils a signalling function firms (dp9495,  $p=0.9501$  for the recognition,  $p=0.0248$  for the timing). A second difference is that the control variable of loss carry forwards has a marginally significant impact on the recognition decision ( $p=0.0742$ ) but not on the timing decision ( $p=0.8199$ ).

For the non-tax paying firms, recognition provides a signal (dp9495,  $p=0.0006$ ), whereas the timing does not ( $p=0.4556$ ). The non-tax paying firms signal their positive inside information by the recognition of deferred taxes in the balance sheet. Because the cost of imitation is high for the firms with unfavourable information, they withhold from recognising positive deferred taxes in the balance sheet. As firms with unfavourable prospects do not have an incentive to imitate, firms with favourable prospects do not have to use a second signal to reveal their private information. This also explains the insignificant coefficient of dp9495 for the timing decision for the non-tax paying firms. These results suggest that differences in the cost of recognising deferred taxes explain why the timing of the recognition is not needed as a second signal.

Another difference between the tax paying and non-tax paying firms is that for the tax-paying firms, the future change in solvency significantly affects that recognition decision ( $p=0.0344$ ), but the future solvency has no significant impact on neither the recognition ( $p=0.8608$ ) nor the timing ( $p=0.3788$ ) decisions for the non-tax paying firms. Both non-tax paying firms with favourable and unfavourable prospects need a lot of new debt to guarantee the survival of the firm and they are not concerned by a high increase in the debt level. They find it more important to reveal their private information by recognising positive deferred taxes than to limit the increase in the debt level.

Finally, with respect to the remaining control variables, the results indicate that while larger tax paying firms are significantly more likely to recognise ( $p=0.0018$ ) and do so earlier ( $p=0.0078$ ), size does not have a significant impact on either decision for the non-tax paying firms ( $p=0.6176$ ;  $p=0.1248$ ). As for the entire sample, however, the presence of an auditor positively influences the recognition for the tax-paying firms ( $p=0.0432$ ).

## 5. Conclusion

This paper extends the literature on the signalling function of accounting and financial information by investigating the information content of the adoption of a certain accounting practice, namely the recognition of deferred taxes in the financial statements. The new accounting law on deferred taxes (Royal Decree of December 30, 1991) requires all Belgian firms to recognise deferred taxes for all grants on the balance sheet as of 30/12/91. As the main purpose of this law is a better true and fair view, the deferred taxes should be recognised for all grants booked on the balance sheet of 1991.

This particular characteristic offers an interesting sample for research. As the moment of introduction does not depend on the timing of the receipt but is the same for all firms with grants received before December 30 1991, two interesting research questions can be investigated. First, it can be studied what determines the recognition of deferred taxes in the balance sheet. Second, the timing of the introduction as an information mean can also be investigated.

In the study of the important factors, the emphasis is placed on the signalling and the balance sheet smoothing incentives. Different from other studies the signalling value of the recognition and its timing are investigated together. The results indicate that these two choices supplement one another as signalling devices. Firms with favourable inside information are more likely to recognise deferred taxes. Moreover, within the class of recognisers, early recognisers perform significantly better.

It is also shown that the timing is not always needed as a second signal. It is only necessary when most firms recognise positive deferred taxes in the balance sheet. This situation occurs when the difference in the signalling cost is relatively low between the different types, that is for tax paying firms, which all have a relatively good solvency position. On the contrary, the recognition of deferred taxes is sufficient for non-tax paying firms to reveal their private information. Non-tax paying firms with unfavourable information do not have any incentive to recognise since it can result in debt covenant violation and the cost of imitating the firms with favourable inside information is too high. However, for both tax paying and non-tax



paying firms, the recognition and its timing only have limited signalling value. It can only signal in the long run whether a firm is profitable or not but it can not give information about the increase in performance.

The results for the balance sheet smoothing hypothesis are also different for the group of tax paying and non-tax paying firms. As expected, smoothing the debt ratio is only the concern of the tax paying firms, non-tax paying firms need a lot of new debt to guarantee the survival of the firm. If a tax paying firm expects high increases in debt, a too high decrease in the solvency position can be avoided by not recognising deferred taxes in the balance sheet. A high increase in the debt ratio compared to the previous period is a reason to postpone the recognition.

Although this paper considers a specific situation, the introduction of deferred taxes in Belgium, the ideas can be generalised to other countries. If a new accounting law with an extended adoption period is introduced, the timing of the introduction as well as a particular choice can supply information about the expected success. The literature would certainly benefit from exploring the relationship between those two signalling devices, the accounting choice and its timing, in different environments. Furthermore, the incentives for balance sheet management also need more attention.

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