Tax Planning and International Financial Reporting Standards  
-IFRS- 

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Abstract 

The adoption of the International Accounting Standard 12 has direct implications on published financial statements. IAS 12 requires the tax consequences of all transactions to be recognized in the financial statements as well as in the disclosure following the statements. This paper investigates whether taxes presented according to the International Financial Reporting Standards – IFRS- Financial Statements convey value relevant information. We ask: Do taxes derived from published IFRS Financial Statements convey information on tax planning policies and thus can be used to predict future taxation? Are the IFRS deferred taxation treatments used as vehicles for achieving tax planning strategies? Is IFRS tax information value relevant and fully appreciated by stock market participants? The empirical evidence suggests that past income taxes provide information regarding firms’ future tax position. Firms use deferred taxation strategies in order to reduce future tax expenses and meet their tax planning policies. This tax planning strategy is technically “masked” by the adverse effect of tax liabilities on tax assets. Finally, tax strategies in the framework of IFRS adoption provide value relevant information useful to stock market participants. Misinterpretation in assessing the tax effects of accounting choices can lead to wrong investment decisions and thus increasing regulation on the disclosure of the tax information becomes necessary.

Keywords: Tax Planning, International Accounting Standard 12, IAS 12, Income Taxes, Deferred Tax Assets, Deferred Tax Liabilities.

JEL Classifications: G1, M40, M41

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I. Introduction

The most obvious and immediate impact of International Financial Reporting Standards – IFRS- in Financial Reporting has been the adoption of Tax Reporting. The adoption of the International Accounting Standard 12 – IAS 12 - has direct implications on published financial statements. IAS 12 requires the tax consequences of all transactions to be recognized in the financial statements. As a result, IAS 12 requires full recognition of deferred taxation beyond that of current taxation. It is a reality, therefore, for all enterprises that their tax position cannot be evaluated based on their financial accounting treatments only. Moreover, according to major business headlines, there are concerns that: “IFRS brings tax out of the back room…” In conjunction with the well known corporate scandals like Enron and WorldCom, the complexity of accounting for taxation stresses the importance of companies’ tax management strategies and makes it interesting to examine the potential impact of IFRS tax philosophy on firms’ decision making.

We seek to provide empirical evidence whether tax planning on current and deferred taxes provide information regarding firms’ strategic choices on the IFRS financial reporting setting. Taxes appear in the balance sheet (long term assets and liabilities) as well as in the income statement and the disclosure following the financial statements. In one aspect the basic tax planning goal is to identify tax treatments that have potential influence on firms’ future profitability. On the other hand, tax minimization is not necessarily the objective of effective tax planning. In other words, tax planning in not equivalent to minimizing company taxes but maximizing future development performance and position. Tax management affects financial accounting choices and results (for example year-end results, dividends payments) and vise versa. Current taxes are directly linked to effective tax rates, while deferred taxes

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2 International Financial Reporting Standards –hereafter IFRS.
3 International Accounting Standard 12 – hereafter IAS12.
could postpone or accelerate the future tax liabilities. Tax policy decisions would finally reflect the companies’ strategic management on this principal cost risk.

If taxation reporting, according to IAS 12, conveys value relevant information and is used as a vehicle for managers to communicate and/or hide expectations, investors should carefully evaluate firms’ accounting choices to achieve economic goals.

Our paper contributes to existing literature on tax planning scenarios by asking the following questions: Do taxes derived from IFRS published financial statements convey useful information on tax planning strategies and thus can be used to predict future taxation? Are IFRS deferred taxation treatments used as vehicles for managers to achieve tax planning strategies? Is IFRS tax information value relevant and is this information fully appreciated by stock market participants? To answer the first question we associate total past taxes with future taxes. We further decompose total taxes to current taxes and deferred taxes recognized in the income statement. To answer the second question we associate current/deferred taxes to the changes in total income taxation. We further control for the level of pre-tax income. To answer the last question we associate future stock returns with IFRS total taxes/deferred taxes after controlling for other fundamental effects such as pre-tax earning and/or cash flows from operations and total accruals. We also introduce an interactive term for taxes on the pre-tax earning and/or accrual component of earnings to capture possible tradeoff effects.

Furthermore, our paper contributes to existing literature by providing insights to market participants and professionals of the complexity and ambiguity of tax reporting in an IFRS setting.

Our empirical findings have implication for investors, standard setters and researchers. The findings reveal that past information on income taxes provide information regarding firms’ future tax position. In addition tax disclosure, according to IFRS, provides new information to investors. While current taxes are directly linked to effective tax rates and generate tax liabilities, deferred tax accounting is

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5 We derive our tax variables from the Income Statement and the Disclosure following the Financial Statements
used to reduce the tax expenses by generating deferred tax assets. This tax planning strategy is technically “masked” by the adverse effect of tax liabilities to tax assets. Finally, our findings suggest the presence of IFRS taxation strategies which are based on tradeoff scenarios between tax management and earnings management treatments to contain value relevant information useful to stock market participants. As a result increasing regulation on the disclosure of tax information looks necessary.

The rest of the paper is organized as follows: Section 2 briefly discusses existing literature on tax accounting choices. Section 3 presents the research hypotheses and methodology used in the analysis. Section 4 describes the sample selection while Section 5 presents the empirical results. Finally, Section 6 concludes the paper.

2. Literature Review

Prior literature provides a number of studies in the field of empirical accounting research in taxation. Pope (1979) presented the complexity of tax concept of earnings and profits to be based on the unclear definition of earnings and profits in the tax law and the spread of its components into the Internal Revenue Code. Mills and Newberry (2001) suggested that managers have a more direct access to financial reporting than to tax reporting, influencing accounting income rather than tax income. Consequently, deferred taxation will be increased or decreased according to management earnings targets. Dhaliwal et al. (2003) added that management estimates and negotiates tax expense with their auditors immediately prior to earnings announcements, as a final effort to meet analysts’ expectations or the firm’s plans. At the same time the final tax outflow depends on the tax planning followed by the firm. Coppens and Peek (2004) examined the prevalence of earnings management by private firms in eight European countries with different institutional backgrounds and realized that private firms in countries with high financial and tax

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6 These studies investigate taxation issues under country specific generally accepted accounting principles (GAAP)
accounting alignment, manage earnings to reduce taxes. Guenther (1994), suggested that accruals of larger firms are managed depending on profits and on the tax rate applicable each year.

In the same aspect, shifting the recognition of revenues and expenses across years and managing tax accruals were also examined by Maydew (1997). It was suggested that firms with greater investment tax credits shifted more regularly revenues, in order to present profits and taxes according to management plans. Moreover, according to Dhaliwal et al. (2003) when managers have an incentive to achieve a particular earnings target, the tax expense account provides their final opportunity for earnings management. The tax element as one of the finally defined and calculated figures during the preparation of the financial statements provides the opportunity to management to handle and influence the final amount and consequently the profits after tax figure and deferred taxation. Their research provided evidence that tax expense is manipulated and used as a reserve to manage earnings when other accruals cannot fulfil the management’s target. Phillips et al. (2003) also, attempted to analyze the specific tax accrual accounts that are used for earnings management through the establishment of the incremental usefulness of the change in net deferred tax liabilities. Their research found evidence that the change in a firm’s net deferred tax liability is one of the main accrual elements applied by management for earnings management. It was suggested that the deferred tax figures reflecting revenue and expense accruals and reserves are the most important factors for earnings management. Lev and Nissim (2004) examined the information included in estimated taxable income about equity values and future earnings growth, incremental to cash flows and other growth control variables. Their results indicate that the ratio of tax-to-book income predicts earnings growth for up to five years ahead, both before and after the implementation of SFAS No. 109 in 1993, with a general increase over time in predictive ability. It was proved that public companies disclose their taxable income implying that corporate taxable income plays an important role in macroeconomic statistics. Burgstahler et al. (2002) examined the changes in the percentage of the gross deferred tax asset
reserved by the valuation allowance and compare this to the regular changes in the valuation allowance, incorporating changes both in the deferred tax asset and the changes in the valuation allowance.

In the same framework, Miller and Skinner (1998) find that tax credit and tax loss carry forwards explain mainly the valuation allowance, which in turn is larger for firms with relatively more deferred tax assets. Desai and Dharmapala (2006) examined the relationship between earnings management and corporate tax avoidance. It is expected that tax shelter products enable managers to manipulate reported earnings. It is then recommended that shareholders and boards should realize managerial efforts to reduce corporate tax obligations. It is though not proved that there is a value transfer from state to shareholders through corporate tax avoidance. In contrast, they concluded that tax avoidance demands planning of earnings manipulation, to advance the interests of managers rather than shareholders. Ettredge et al. (2006), examining the application of SFAS 109, investigated the associations of various versions of deferred tax expense variables and book income minus taxable income variables with existence of fraud. Their findings suggested that higher level of deferred tax expenses is positively related to the existence of fraud. Finally, Adhikari et al. (2005) examined the relationship between effective tax rates and earnings management in a non-Western context. The reaction and tax planning of Malaysian firms through accounting choices is further analyzed. It is realized through this research that large Malaysian firms with low effective tax rates decrease book income prior to a reduction in corporate tax in order to influence tax policy. This fact in combination with the findings that US firms use accounting choice to realize economic objectives implies that earnings management can be generalized outside the US context. Finally, Shackelford and Shevlin (2001) provide a historical record of empirical accounting research in taxation.
3. Research Hypotheses and Methodology

3.1 The International Accounting Standard 12

The development and internationalization of accounting standards, with the adoption of IFRS, was not followed by relevant changes in taxation issues which remained country specific. The gap created, in combination to the complexity of estimating future tax obligations and the time difference for adjustments required by tax law, transformed taxation treatments into one possible management tool for firm’s management.

The tax consequences of all transactions are recognized in the financial statements. The differences between IFRS (previously known as International Accounting Standards-IAS) and tax authorities’ requirements create differences in the carrying amounts of assets and liabilities. The adjustments developed for the reconciliation of these differences in the value of carrying amounts of assets and liabilities, are presented as deferred tax assets and liabilities in the financial statements. Deferred figures reflect future claims and obligations and are settled in every period that the firm prepares its financial statements.

More specifically, the International Accounting Standard 12, clearly states the difference between accounting and taxable profit. Although accounting income is defined as “net profit or loss for a period before deducting tax expense”, taxable profit is defined as “the profit for a period, determined in accordance with the rules established by the taxation authorities, upon which income taxes are payable”. It is the reality, therefore, for all enterprises that they cannot estimate their tax expense based on their accounting profits only.\(^7\)

\(^7\) Tax law of every country defines the differences and the adjustments that have to take place for the estimation of the taxable profits.
Indicatively, according to IFRS, property plant and equipment should be depreciated over their useful economic life and revalued when their valuation should be updated, whereas tax law requires that there should be applied an accelerated depreciated method and cost basis valuation. When assets are acquired IFRS recognizes their fair value, whereas taxation recognizes their pre-acquisition carrying amount. Goodwill on the other hand, is not even tax deductible and its amortization should be accelerated, in contrast to its capitalization and amortization during its useful life, imposed by IFRS.

As far as provisions are concerned, IFRS requires the calculation of the present value of the liability, whereas for taxation purposes, recognizes the undiscounted amount. Then, although accrual basis is applied for accounting purposes for pensions, revenues and interest, tax law imposes their calculation on payment, receipt and payment/receipt basis.

The above mentioned examples present a sample of the differences that require adjustments in order for the reported accounting income to become taxable. The complexity of the implementation of IAS 12 makes it interesting to examine the potential impact of tax planning strategies on firms’ decisions making in an IFRS setting.

3.2 Hypotheses

We seek to provide empirical evidence whether tax planning strategies on current and deferred taxes provide value relevant information regarding firms’ strategic choices on financial reporting under IFRS. Our analysis relies on the assumption that firms utilize aggressively the differential requirements between IFRS and tax authorities’ in the accounting choices presented in the published financial statements. Furthermore, we suggest that there is a strong possibility for stock market participants not to fully appreciate the information content and/or the new risk source coming from the IFRS financial tax

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8 Shackelford and Shevlin (2001) provide a review for smoothing taxable income incentives appearing in the literature.
income treatments. Misinterpretation in assessing the tax effects of accounting choices can lead to wrong investment decisions. The following null hypotheses are formed:

**H1:** Taxes derived from published financial statements under IFRS convey information on tax planning strategies and thus can be used to predict future taxation.

**H2:** IFRS deferred taxation treatments are used as vehicles for managers to achieve tax planning strategies.

**H3:** IFRS deferred taxation treatments provide value relevant information which is not fully appreciated by stock market participants.

Previous research has stressed the implications of tax information on the future profitability of firms (Lev and Nissim 2004, Coppens and Peek 2005, see Shackelford and Shevlin (2001) for review). While others (Coppens and Peek 2005, Lamb et al. 1998, McLeay 1999) have reported the differences between financial and tax accounting practices\(^9\). In accordance with previous studies we expect that taxation information-disclosed because of the adoption of IAS 12-convey value relevant information regarding tax planning strategies in an IFRS financial reporting setting\(^{10}\).

### 3.3 Regression Models

#### 3.3.1 Future Taxes

To empirically test our research hypotheses we estimate several regression models. We derive our accounting variables used in these models both from a) the published financial statements i.e. Balance

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\(^{9}\) These studies are using European countries data for their empirical testing.

\(^{10}\) Our hypotheses and findings are not directly comparable to prior research since the adoption of IFRS became recently compulsory (The adoption of IFRS became compulsory for UK listed firms on January 1\(^{st}\) 2005).
Sheet and Profit and Loss Statement and b) the disclosure following the financial statements\textsuperscript{11}. The reconciliation of “accounting” and “taxable” profit is described in detail in the disclosure following the financial statements. This makes it more interesting to see whether market participants efficiently evaluate the mandatory disclosure on firms’ tax practices.

In a first step, we regress past taxes reported in year t-1 on future taxes reported in year t to test whether past taxes can be used as predictor of future tax obligations:

\[ \text{TTAX}_t = \alpha + \beta \text{TTAX}_{t-1} + \varepsilon \] \hspace{1cm} (1)

Where:

\( \text{TTAX}_t \) : Total Income Taxes in period t reported in the Profit and Loss Statement (P&L)\textsuperscript{12}.

\( \text{TTAX}_{t-1} \) : Total Income Taxes in period t-1 reported in the P&L.

On a second step, we associate changes in Total Income Taxes with past period Current Income Taxes and Deferred Taxes i.e. Deferred Tax Assets and Deferred Tax Liabilities, (model 2).

\[ \Delta \text{TTAX}_t = \alpha + \beta \text{CT}_{t-1} + \gamma \text{DTA}_{t-1} + \delta \text{DTL}_{t-1} + \varepsilon \] \hspace{1cm} (2)

Where:

\( \Delta \text{TTAX}_t \) : Changes in Total Income Taxes in period t relative to period t-1 reported in the P&L.

\( \text{CT}_{t-1} \) : Current Income Taxes in period t-1 reported in the reconciliation of P&L.

\( \text{DTA}_{t-1} \) : Deferred Tax Assets in period t-1 reported in the reconciliation of P&L\textsuperscript{13, 14}.

\( \text{DTL}_{t-1} \) : Deferred Tax Liabilities in period t-1 reported in the reconciliation of P&L.

\textsuperscript{11} IFRS requires firms to publish: i) a Balance Sheet ii) a Profit and Loss Statement iii) a Statement of Changes in Retained Earnings iv) a Cash Flows Statement and v) Disclosure following the financial statements.

\textsuperscript{12} Profit and Loss Statement hereafter : (P&L).

\textsuperscript{13} The reconciliation of accounting and taxable profit is described in detail in the disclosure following the IFRS financial statements.

\textsuperscript{14} Thus, in other words Deferred Tax Assets and Deferred Tax Liabilities can be considered as Tax Revenue and Tax Expense respectively.
Further, by running regression models (3) and (4) we separately associate the Total Income Taxes components i.e. Current Taxes and Deferred Tax Assets and Liabilities with changes in future tax expenses.

\[ \Delta TTAX_i = \alpha + \beta CT_{t-1} + \varepsilon \]  \hspace{1cm} (3)
\[ \Delta TTAX_i = \alpha + \beta DTA_{t-1} + \gamma DTL_{t-1} + \varepsilon \]  \hspace{1cm} (4)

Where:

CT_{t-1} : Current Income Taxes in period t-1 reported in the reconciliation of P&L.
DTA_{t-1} : Deferred Tax Assets in period t-1 reported in the reconciliation of P&L.
DTL_{t-1} : Deferred Tax Liabilities in period t-1 reported in the reconciliation of P&L.

Finally, in order to investigate whether tax variables provide independent information we re-run models 3-4 after controlling for the level of pre-tax income in regression models (5) and (6):

\[ \Delta TTAX_i = \alpha + \beta PTE_{t-1} + \gamma CT_{t-1} + \varepsilon \]  \hspace{1cm} (5)
\[ \Delta TTAX_i = \alpha + \beta PTE_{t-1} + \gamma DTA_{t-1} + \delta DTL_{t-1} + \varepsilon \]  \hspace{1cm} (6)

Where:

P CT_{t-1} : Current Income Taxes in period t-1 reported in the reconciliation of P&L.
DTA_{t-1} : Deferred Tax Assets in period t-1 reported in the reconciliation of P&L.
DTL_{t-1} : Deferred Tax Liabilities in period t-1 reported in the reconciliation of P&L.
PTE_{t-1} : Pretax Earnings in year t-1 reported in the P&L.

All the variables used in the regression models (1-6) are deflated by total assets in year t-1, which is a size variable. Following Madalla (1988) we also scale the intercept.
We focus on the association of tax information with future stock returns, because we hypothesize that tax treatments under IFRS provide value relevant information which is not appreciated by the stock market.

In the first model (model 7) we run a two stage least square regression (2SLS) where we associate the changes in Total Income taxes with the three months post to the publication of the financial statements period cumulative market adjusted returns, after controlling for pre-tax income. In running the model we treat the $\Delta TTA X_t$ variable as endogenous caused by current and deferred tax treatments as described in model (2). Since the total tax expense under IFRS is partially derived from pre-tax income (i.e. current taxes computed under tax rules plus deferred tax liabilities minus deferred tax assets) it is interesting to see the market appreciation of the new information content of the total tax expense variable. Enhanced by prior literature (Klassen 1997, Beatty and Harris 1999 and Mikhail 1999) we introduce an interactive term for taxes on pre-tax earnings to capture possible tradeoff effects.

$$CAR = \alpha + \beta \Delta TTA X_t + \gamma PTE_{t-1} + \delta \Delta TTA X_t \times PTE_{t-1} + \varepsilon$$ \hspace{1cm} (7)$$

Where:

CAR: Cumulative market adjusted returns starting three months after the publication of financial statements.\(^{15}\)

$\Delta TTA X_t$: Changes in Total Income Taxes in period $t$ relative to period $t-1$ reported in the P&L.

$PTE_{t-1}$: Pre-tax Earnings in year $t-1$ reported in the P&L.

\(^{15}\) Following prior research practices for UK firms (see A Al Horari et al. 2003), we consider for financial year ending 31 December $t$ availability of financial information at the end of June in calendar year $t+1$. Market adjusted returns are calculated by subtracting from raw returns either a) the FTSE100 index returns or b) the all shares market index.
The interpretation of a significant coefficient on $\Delta TTA_{Xt}$ is that after controlling for the effects of $PTE_{t-1}$ on the model, the firm’s tax status has an effect on future stock returns. A significant coefficient on the interaction term $\Delta TTA_{Xt} \times PTE_{t-1}$ is consistent with firms considering the level of the other variable and hence tradeoff tax and non pre-tax earnings benefits. Assume the following scenarios:

<table>
<thead>
<tr>
<th>$\Delta TTA$</th>
<th>(Low)</th>
<th>(High)</th>
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<tbody>
<tr>
<td>PTE</td>
<td>(Low)</td>
<td>(High)</td>
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**Scenario 1:** The firm achieves low PTE and a low change in the total tax expense occurs. It is hypothesized there is no incentives to exercise tax management, so there will be no effect in stock returns.

**Scenario 2:** The firm achieves low PTE but a high change in the total tax expense occurs. The firm is hypothesized to exercise tax management and a significant association is expected.

**Scenario 3:** The firm achieves high PTE but a low change in the total tax expense occurs. As in scenario 2 tax management is possible and a significant association is expected.

**Scenario 4:** The firm achieves high PTE and high change in the total tax expense occurs. As in scenario 1 it is hypothesized there is no incentives to exercise tax management, so there will be no effect in stock prices.

In the second model (model 8) in order to further explore the market appreciation on the tax management scenario (possibly captured by the interaction term $\Delta TTA_{Xt} \times PTE_{t-1}$ in model 7) we decompose pre-tax earnings in cash flows from operations and total accruals and we treat deferred tax assets and deferred tax liabilities as exogenous/independent variables. We also introduce an interactive...
term for taxes on the accrual component of earnings to capture possible tradeoff effects. The key question here is whether deferred taxation treatments provide value relevant information that is not included in other basic financial variables such as cash flows from operations and accruals.

\[
CAR = \alpha + \beta \Delta \text{TAX}_t + \gamma \text{CFO}_t + \delta \text{TAC}_t + \epsilon \text{DTA}_t + \sigma \text{DTL}_t + \zeta \Delta \text{TAX}_t \times \text{TAC}_{t-1} + \varepsilon \quad (8)
\]

Where:

\(\text{CAR}\) Cumulative market adjusted returns starting three months after the publication of financial statements.

\(\Delta \text{TAX}_t\) Changes in Total Income Taxes in period \(t\) relative to period \(t-1\) reported in the P&L.

\(\text{CFO}_t\) Cash Flows from Operations in year \(t\).

\(\text{TAC}_t\) Total accruals in year \(t\).

\(\text{DTA}_t\) Deferred Tax Assets in period \(t\) reported in the reconciliation of P&L.

\(\text{DTL}_t\) Deferred Tax Liabilities in period \(t\) reported in the reconciliation of P&L.

All the variables used in the regression models (8-9) are also deflated by total assets in year \(t-1\) (including the scaling of the intercept\(^{16}\)).

4. Sample Selection

The London Stock Exchange (LSE) is a dominant European market with particular interest on the information dispersion on developments in accounting standards -IFRS/IAS- and local GAAP\(^{17}\). The adoption of IFRS became compulsory for UK listed firms on January 1\(^{st}\) 2005 but a number of companies voluntarily reported financial statements according to IFRS in year 2004 as well. In this study we

\(^{16}\) For the scaling of the intercept term, see Madalla (1988).

\(^{17}\) Key IFRS changes impacting financial statements under local GAAP are in brief the following: taxation-deferred taxes FRS 19 to IAS 12; Pensions SSAP 24 to IAS 19; Acquisitions/Goodwill FRS 6/7/10 to IFRS 3; Fixes assets/infrastructure accounting FRS 15 to IAS 16; Dividends, Cost. Acc to IAS 10.
examine the tax reporting policies of firms listed in the London Stock Exchange for three consecutive years 2004 to 2006\(^{18}\).

Comparing FRS 19 of UK GAAP to IAS 12 of IFRS regarding deferred taxation, prevails that there is a significant difference regarding the concept of deferred taxation, as analyzed by the two standards. According to IAS 12, apart from current taxation, deferred taxation is also fully recognized. Deferred tax is recognized on the basis of taxable temporary differences due to the differences between accounting standards and tax authorities’ requirements. Temporary differences include all timing differences and many permanent differences in the values of carrying amounts of assets and liabilities, as treated by accounting and tax legislation. On the other hand, UK GAAP under FRS 19 develops a completely different concept of deferred taxation. More specifically, FRS 19 recognizes deferred tax on the basis of timing differences, whereas permanent differences should not be recognized.

Our sample data have been derived from Thomson Financial World Scope Database and Datastream. From the non-financial firms listed in the LSE during our period of interest we have identified 433 firms having available all the necessary information on tax reporting\(^{19}\). The further elimination of forty five firms (45) not having available stock return and fifteen firms (15) with year end other than December 31 left us with a complete sample of 373 firm-observations\(^{20}\).

Table 1 provides descriptive statistics for the main variables used in the regression models.

\[\text{[INSERT TABLE 1 ABOUT HERE]}\]

\(^{18}\) UK GAAP polices refer to FRS 19 for accounting treatments for Deferred Taxes.


\(^{20}\) We exclude from our sample firms with year end other than December 31 to avoid possible look ahead bias in the estimation of future market adjusted returns since our study examines sort term market reaction to IFRS adoption.
The mean value of total tax expense ($TTAX_t$) for the year $t$ is 0.0277 while being 0.0189 for year $t-1$. The mean value of current taxes ($CT_{t-1}$) is 0.01612 while the mean value for total deferred tax assets ($TDA_{t-1}$) is -0.01437 and deferred tax liabilities ($TDL_{t-1}$) is 0.0171. Finally, the mean value of total accruals ($TAC_{t-1}$) is -0.0709. As becomes apparent from the mean value of pre-tax ($PTE_{t-1}$) and after tax earnings ($ATE_{t-1}$) -0.0011 and -0.0200 respectively our sample contains both profit and loss firms assuming that the tax policy incentives are apparent regardless the level of taxable income. Firms with negative book values of equity have been excluded from our sample.

5. Empirical Findings

This section presents the empirical results of the regression models. The models have been estimated by using the ordinary least squares (OLS) and two stage least squares (2SLS) methodologies. The reported t-statistics for the regression models have been estimated using White’s (1980) heteroscedasticity consistent covariance matrix. We test whether high collinearity is present in our models by calculating the variance inflation factors (VIFs).

Table 2 presents the empirical findings from regression model (1). The findings reveal that past total income taxes are positively associated with future income taxes at the 1% level of significance. Prior knowledge on reported income taxes provides value relevant information regarding firms’ future tax obligations.

[INSERT TABLE 2 ABOUT HERE]

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21 Two (2) firms have been deleted for having negative book value of equity.
22 As a robustness test to mitigate the potential effects of cross-sectional correlation, we also estimated models on a year by year basis and then calculate the mean of the annual coefficients.
23 The values of VIFs suggest that collinearity does not affect inferences drawn from our models.
24 In order to control for serial correlation in the residuals, we estimate this model using the Huber - White - Sandwich corrected t statistic.
Table 3 presents the empirical findings from regression models that are used to separately evaluate the information content of total income tax components i.e. current taxes and deferred tax assets and liabilities.

[INSERT TABLE 3 ABOUT HERE]

By decomposing total income taxes into current and deferred tax assets and liabilities (model 2) the regression reveals an interesting relationship. We find a significant association between past reporting taxation and future tax obligations only regarding past current taxes at the 10% level of significance. Moreover we notice that deferred tax liabilities are positively related to the changes in total income taxes while deferred tax assets are related negatively. To further examine this issue we separately associate (regression model 3 and 4) past current and deferred taxes to changes in total income taxes respectively. The empirical findings reveal a positive association between past current taxes and changes in future total income taxes at the 1% level of significance. Current taxes are directly linked to effective tax rates and thus generate future tax expenses. The higher the taxable income or the effective tax rate, the higher would be the firms’ future tax liabilities. On the other hand, when associating deferred taxes with changes in future income taxes, we find a statistically significant negative association at the 1% level of significance for the differed tax assets variable and a non-significant association for the deferred tax liabilities variable. This fact indicates that tax reporting accounting choices are used to reduce future tax expenses by generating deferred tax assets. Taken as a whole, tax planning strategies affecting firms’ future tax position and risk are technically “masked” by the adverse effect of current tax obligations on deferred tax assets.

The empirical evidence derived from the regression models that we just analyzed is in accordance with our hypothesis H1 that taxes derived from published IFRS financial statements convey information on tax planning policies and thus can be used to predict future taxation.
To further examine this issue we associate current taxes (model 5) and deferred taxes (model 6) after controlling for pre-tax earnings to changes in future income taxes.

[INSERT TABLE 4 ABOUT HERE]

Table 4 presents the empirical findings from regression models (5) and (6). We find that the association of past current (model 5) with future changes in total income taxes remains in the same direction even after controlling for the level of pre-tax income. Also that, when associating deferred taxes with changes in future income taxes a statistically significant negative association at the 1% level of significance is observed only for the differed tax assets variable (DTA_{t-1}) and a non-significant association is observed for the deferred tax liabilities variable (DTL_{t-1}). This evidence supports our previous suggestion that tax planning strategies are used as a vehicle to postpone/avoid future obligations related to taxes. The findings are also in accordance with our hypothesis H2 that IFRS deferred taxation treatments are used as vehicles for achieving tax planning strategies.

Since specific strategies in tax planning influence the future obligation related to taxes, as the up to now empirical evidence suggests, we further explore the market appreciation of these IFRS tax information.

The empirical evidence of model (7) reveals a positive association of pre-tax earnings with future market adjusted returns at the 5% level of significance. Moreover the significant coefficient on the interaction term \( \Delta TTAX_t \times PTE_{t-1} \) is consistent with firms considering the level of the other variable and hence tradeoff tax and non pre-tax earnings benefits. The scenario analysis described earlier (in section 3.3.2) implies that the extent to which the association of change in total taxes with stock returns is related to the level of pre tax income there is a strong suggestion that firms may tradeoff tax reporting and financial reporting accounting treatments in order to maximize future performance. This result further
supports hypothesis \( \text{H3} \) that IFRS deferred taxation treatments provide value relevant information possibly not fully appreciated by stock market participants.

To further examine whether tax strategies in the framework of IFRS adoption are appreciated by stock market participants, in model (8) following Dechow et al. (2003) we further decompose reported earnings into cash flows from operations and total accruals. We also examine the additional information content of the deferred tax assets and liabilities component of taxes as two independent variables. The interactive term now concerns the relation of taxes on the accrual component of earnings to capture possible earnings management and tax management tradeoff effects. The empirical evidence reveals a positive and significant association on the 5% level of significance for the total accruals (TAC\(_{t-1}\)) and deferred tax assets variables (DTA\(_{t-1}\)) with future market adjusted returns. Also, a negative and significant association at the 10% level of significance on the interaction term \( \Delta \text{TAX}_{tx} \times \text{TAC}_{t-1} \). These additional findings further support our \( \text{H3} \) hypothesis that IFRS deferred taxation treatments provide additional value relevant information -especially regarding deferred tax assets- and this information is not fully incorporated by stock market participants possibly due to the complexity and ambiguity of tax reporting in an IFRS setting.

### 6. Conclusions

This paper investigates whether taxes derived from published financial statements and the disclosure following the financial statements according to IFRS, provide information on firms’ future tax position. Moreover, it is analyzed whether IFRS deferred taxation treatments are used as vehicles for managers to achieve tax planning strategies. Our analysis supports that past information on income taxes provide information regarding firms’ future tax obligations. In addition, while current taxes are directly linked to effective tax rates and generate tax liabilities, deferred tax accounting is used to reduce the tax
expenses by generating deferred tax assets. This tax planning strategy is technically “masked” by the adverse effect of tax liabilities on tax assets. Finally, our findings suggest the presence of IFRS taxation strategies which are based on tradeoff scenarios between tax management and earnings management treatments to contain value relevant information useful to stock market participants. The findings contribute to existing literature by providing insights to market participants and professionals of the complexity and ambiguity of tax reporting in an IFRS setting. Misinterpretation in assessing the tax effects of accounting choices can lead to wrong investment decisions and thus increasing regulation on the disclosure of the tax information becomes necessary.
References


Table 1
Descriptive Statistics
(n=373)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Median</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTAX(_t)</td>
<td>-0.023</td>
<td>0.536</td>
<td>0.018</td>
<td>0.028</td>
<td>0.058</td>
</tr>
<tr>
<td>TTAX(_{t-1})</td>
<td>-0.265</td>
<td>0.189</td>
<td>0.016</td>
<td>0.019</td>
<td>0.035</td>
</tr>
<tr>
<td>CT(_{t-1})</td>
<td>-0.265</td>
<td>0.329</td>
<td>0.012</td>
<td>0.016</td>
<td>0.060</td>
</tr>
<tr>
<td>DTA(_{t-1})</td>
<td>-0.203</td>
<td>0.000</td>
<td>0.000</td>
<td>-0.144</td>
<td>0.028</td>
</tr>
<tr>
<td>DTL(_{t-1})</td>
<td>0.000</td>
<td>0.235</td>
<td>0.000</td>
<td>0.017</td>
<td>0.036</td>
</tr>
<tr>
<td>PTE(_{t-1})</td>
<td>-14.814</td>
<td>1.477</td>
<td>0.076</td>
<td>-0.011</td>
<td>0.824</td>
</tr>
<tr>
<td>CFO(_{t-1})</td>
<td>-5.164</td>
<td>2.512</td>
<td>0.069</td>
<td>0.051</td>
<td>0.382</td>
</tr>
<tr>
<td>TAC(_{t-1})</td>
<td>-9.637</td>
<td>0.821</td>
<td>-0.025</td>
<td>-0.071</td>
<td>0.537</td>
</tr>
<tr>
<td>ATE(_{t-1})</td>
<td>-14.802</td>
<td>1.391</td>
<td>0.059</td>
<td>-0.020</td>
<td>0.814</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.807</td>
<td>0.583</td>
<td>-0.032</td>
<td>-0.389</td>
<td>0.172</td>
</tr>
</tbody>
</table>

Variable Definitions:
TTAX\(_t\): Total Income Taxes in period \(t\) reported in the P&L
TTAX\(_{t-1}\): Total Income Taxes in period \(t-1\) reported in the P&L
CT\(_{t-1}\): Current Income Taxes in period \(t-1\) reported in the reconciliation of P&L
DTA\(_{t-1}\): Deferred Tax Assets in period \(t-1\) reported in the reconciliation of P&L.
DTL\(_{t-1}\): Deferred Tax Liabilities in period \(t-1\) reported in the reconciliation of P&L.
PTE\(_{t-1}\): Pre-tax Earnings in year \(t-1\) reported in the P&L
CFO\(_{t-1}\): Cash Flows from Operations in year \(t-1\)
TAC\(_{t-1}\): Total accruals in year \(t-1\)
ATE\(_{t-1}\): After Tax Earnings in period \(t-1\)
CAR: Cumulative market adjusted returns starting three months after the publication of financial statements.
Table 2

\[ TTAX_t = \alpha + \beta TTAX_{t-1} + \varepsilon \quad (1) \]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>107.503</td>
<td>(2.55)***</td>
</tr>
<tr>
<td>TTAX_{t-1}</td>
<td>1.207</td>
<td>(14.06)***</td>
</tr>
</tbody>
</table>

R² = 0.555
F-statistic = 104.67***

Variable Definitions:
TTAX \(_t\) : Total Income Taxes in period \(t\) reported in the P&L
TTAX \(_{t-1}\) : Total Income Taxes in period \(t-1\) reported in the P&L

*** statistically significant at the 1\% level of significance
Table 3
Regression Results for the Various Models

Model 2
\[ \Delta TTAX_t = \alpha + \beta CT_{t-1} + \gamma DTA_{t-1} + \delta DTL_{t-1} + \varepsilon \]

<table>
<thead>
<tr>
<th>Constant</th>
<th>CT_{t-1}</th>
<th>DTA_{t-1}</th>
<th>DTL_{t-1}</th>
<th>R^2</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1065.527</td>
<td>0.206</td>
<td>0.104</td>
<td>0.132</td>
<td>0.190</td>
<td>5.52***</td>
</tr>
<tr>
<td>(2.44)**</td>
<td>(1.80)*</td>
<td>(0.54)</td>
<td>(1.45)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 3
\[ \Delta TTAX_t = \alpha + \beta CT_{t-1} + \varepsilon \]

<table>
<thead>
<tr>
<th>Constant</th>
<th>CT_{t-1}</th>
<th>R^2</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>103.179</td>
<td>0.132</td>
<td>0.182</td>
<td>6.79***</td>
</tr>
<tr>
<td>(2.48)**</td>
<td>(3.19)***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 4
\[ \Delta TTAX_t = \alpha + \beta DTA_{t-1} + \gamma DTL_{t-1} + \varepsilon \]

<table>
<thead>
<tr>
<th>Constant</th>
<th>DTA_{t-1}</th>
<th>DTL_{t-1}</th>
<th>R^2</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>96.181</td>
<td>-0.186</td>
<td>-0.003</td>
<td>0.168</td>
<td>6.44***</td>
</tr>
<tr>
<td>(2.24)**</td>
<td>(-2.92)***</td>
<td>(-0.05)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Variable Definitions:
CT_{t-1} : Current Income Taxes in period t-1 reported in the reconciliation of P&L
DTA_{t-1} : Deferred Tax Assets in period t-1 reported in the reconciliation of P&L.
DTL_{t-1} : Deferred Tax Liabilities in period t-1 reported in the reconciliation of P&L.

*** statistically significant at the 1% level of significance
** statistically significant at the 5% level of significance
* statistically significant at the 10% level of significance
Table 4
Regression Results for the Various Models

Model 5
\[ \Delta TTAX_t = \alpha + \beta PTE_{t-1} + \gamma CT_{t-1} + \varepsilon \]

<table>
<thead>
<tr>
<th></th>
<th>PTE(_{t-1})</th>
<th>CT(_{t-1})</th>
<th>R(^2)</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>constant</td>
<td>116.716</td>
<td>0.009</td>
<td>0.118</td>
<td>0.203</td>
</tr>
<tr>
<td></td>
<td>(2.52)*****</td>
<td>(1.63)*</td>
<td>(2.96)*****</td>
<td>5.00***</td>
</tr>
</tbody>
</table>

Model 6
\[ \Delta TTAX_t = \alpha + \beta PTE_{t-1} + \gamma DTA_{t-1} + \delta DTL_{t-1} + \varepsilon \]

<table>
<thead>
<tr>
<th></th>
<th>PTE(_{t-1})</th>
<th>DTA(_{t-1})</th>
<th>DTL(_{t-1})</th>
<th>R(^2)</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>111.549</td>
<td>0.010</td>
<td>-0.164</td>
<td>-0.016</td>
<td>0.192</td>
</tr>
<tr>
<td></td>
<td>(2.32)**</td>
<td>(1.57)</td>
<td>(-2.48)*****</td>
<td>(-0.26)</td>
<td>6.79***</td>
</tr>
</tbody>
</table>

Variable Definitions:
- CT\(_{t-1}\) : Current Income Taxes in period t-1 reported in the reconciliation of P&L
- DTA\(_{t-1}\) : Deferred Tax Assets in period t-1 reported in the reconciliation of P&L.
- DTL\(_{t-1}\) : Deferred Tax Liabilities in period t-1 reported in the reconciliation of P&L.
- PTE\(_{t-1}\) : Pretax Earnings in year t-1 reported in the P&L

*** statistically significant at the 1% level of significance
** statistically significant at the 5% level of significance
* statistically significant at the 10% level of significance
Table 5
Regression Results for the Various Models

Model 7
\[ \text{CAR} = \alpha + \beta \Delta \text{TTAX}_t + \gamma \text{PTE}_{t-1} + \delta \Delta \text{TTAX}_t \times \text{PTE}_{t-1} + \varepsilon \]

<table>
<thead>
<tr>
<th></th>
<th>( \Delta \text{TTAX}_t )</th>
<th>( \text{PTE}_{t-1} )</th>
<th>( \Delta \text{TTAX}<em>t \times \text{PTE}</em>{t-1} )</th>
<th>( R^2 )</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 7</td>
<td>-0.038**</td>
<td>-0.063</td>
<td>0.024</td>
<td>-0.539*</td>
<td>0.014</td>
</tr>
</tbody>
</table>

(\(-4.21)\)***

Model 8
\[ \text{CAR} = \alpha + \beta \Delta \text{TTAX}_t + \gamma \text{CFO}_{t-1} + \delta \text{TAC}_{t-1} + \varepsilon \text{DTA}_{t-1} + \sigma \text{DTL}_{t-1} + \zeta \Delta \text{TTAX}_t \times \text{TAC}_{t-1} + \varepsilon \]

<table>
<thead>
<tr>
<th></th>
<th>( \Delta \text{TTAX}_t )</th>
<th>( \text{CFO}_{t-1} )</th>
<th>( \text{TAC}_{t-1} )</th>
<th>( \text{DTA}_{t-1} )</th>
<th>( \text{DTL}_{t-1} )</th>
<th>( \Delta \text{TTAX}<em>t \times \text{TAC}</em>{t-1} )</th>
<th>( R^2 )</th>
<th>F-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 8</td>
<td>-152.749*</td>
<td>0.056</td>
<td>-0.045</td>
<td>0.045</td>
<td>0.489</td>
<td>-0.227</td>
<td>-0.402</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>(-1.70)*</td>
<td>(0.23)</td>
<td>(-1.54)</td>
<td>(1.97)**</td>
<td>(2.15)**</td>
<td>(-1.26)</td>
<td>(-1.61)*</td>
<td>2</td>
</tr>
</tbody>
</table>

Variable Definitions:
\( \Delta \text{TTAX}_t \): Changes in Total Income Taxes in period \( t \) relative to period \( t-1 \) reported in the P&L
\( \text{CFO}_{t-1} \): Cash Flows from Operations in year \( t-1 \)
\( \text{DTA}_{t-1} \): Deferred Tax Assets in period \( t-1 \) reported in the reconciliation of P&L.
\( \text{DTL}_{t-1} \): Deferred Tax Liabilities in period \( t-1 \) reported in the reconciliation of P&L.
\( \text{PTE}_{t-1} \): Pretax Earnings in year \( t-1 \) reported in the P&L
\( \text{CT}_{t-1} \): Current Income Taxes in period \( t-1 \) reported in the reconciliation of P&L
\( \text{CAR} \): Cumulative market adjusted returns starting three months after the publication of financial statements.

*** statistically significant at the 1% level of significance
** statistically significant at the 5% level of significance
* statistically significant at the 10% level of significance