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## Tax avoidance and accounting conservatism

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Tobias Bornemann

## **Tax Avoidance and Accounting Conservatism**

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# Tax Avoidance and Accounting Conservatism

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February 2018

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**JEL Classification:** H21, H25

**Keywords:** accounting conservatism, tax rate cuts, book-tax conformity

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## 1 Introduction

This study analyzes the relation between corporate taxation and accounting conservatism. Accounting conservatism requires higher verification standards to be included in book income for gains than for losses. Losses are therefore recognized timelier while gains are deferred into the future (Basu, 1997; Watts, 2003a,b). A timelier loss recognition provides early information on value decreasing events and is associated with a broad array of favorable implications for stakeholders. Accounting conservatism positively impacts the value relevance of earnings (Brown, He, and Teitel, 2006), resolves information asymmetries (Lara, Osma, and Penalva, 2014), decreases adverse effects of CEO overconfidence (Ahmed and Duellman, 2013) and managerial risk-taking (Kravet, 2014), decreases the likelihood of future stock price crashes (Kim and Zhang, 2016), facilitates external borrowing while fostering investment (Lara, Osma, and Penalva, 2016) and increases creditors' recovery rate in case of default (Donovan, Frankel, and Martin, 2015).

While an asymmetric recognition of gains and losses in book income under conservative accounting provides stakeholders with early and relevant information, it simultaneously shifts taxable income into the future and defers tax payments. In periods of steady corporate tax rates a deferral of tax payments decreases their present value (Watts, 2003a). Additionally, an increase in accounting conservatism can materialize in a significant tax benefit if a tax rate cut is imminent. Then losses are recognized during the higher taxed earlier period while taxable income is shifted into the lower taxed later period. A tax rate differential between periods therefore provides an incentive to increase conservatism shortly before the tax rate is cut. Recent research showed that firms respond to tax rate differentials across borders (Collins, Kemsley, and Lang, 1998; Bartelsman and Beetsma, 2003; Huizinga and Laeven, 2008; Klassen and Laplante, 2012) and time (Guenther, 1994;

Maydew, 1997; Lin, Mills, and Zhang, 2013; Andries, Cools, and van Uytbergen, 2016) to decrease their accounting effective tax rate (ETR) (Dyreng, Hanlon, and Maydew, 2008). The incentive to increase accounting conservatism prior to a tax rate cut, however, may be mitigated by a lower degree of book-tax conformity. Thus, an increase in accounting conservatism that affects book income is not necessarily reflected in taxable income on a one-to-one basis. Whereas financial accounting standards try to provide early and useful information to stakeholders, tax accounting often follows a revenue-raising function and is subject to political processes (Hanlon, 2005; Hanlon and Heitzman, 2010). Tax accounting therefore often requires less conservative accounting, as reflected, for example, in longer depreciation periods. Hence, a low degree of book-tax conformity potentially undermines the tax benefit associated with an increase of accounting conservatism shortly before a tax rate cut. Against this backdrop, this study analyzes the association between future tax rate cuts on the firms' level of accounting conservatism and countries' degree of book-tax conformity as a potential mediator.

Recent research on the determinants of accounting conservatism strongly supports a theory of accounting conservatism serving as a contracting device that helps to overcome information asymmetries and agency conflicts. For example, firms with higher information asymmetries between managers and investors experience higher levels of conservatism (LaFond and Watts, 2008). Furthermore, accounting conservatism increases in the share of outside directors with stronger monitoring incentives (Ahmed and Duellman, 2007) and decreases in the controlling owner's ownership share (Bona-Sanchez, Perez-Aleman, and Santana-Martin, 2011). Thus, accounting conservatism primarily varies with firms' information environment. Firms that face larger information asymmetries between managers and stakeholders as well as firms with stronger corporate governance enforce higher levels of conservatism (Lara, Osma, and Penalva, 2009) to provide better and timelier informa-

tion to stakeholders. Further work in this area focuses on the interaction and determinants of *conditional* and *unconditional* conservatism. *Unconditional* conservatism is triggered with the inception of the asset and independent from bad news or triggering events (Basu, 1997). In contrast, *conditional* conservatism depends on news or triggering events such as necessary impairments to an asset (Beaver and Ryan, 2005). For example, Qiang (2007) shows that taxation induces unconditional conservatism only. This study, however, does not explicitly account for changes in the tax rate and the incentives that go along with tax rate cuts. I try to shed more light on the question if taxation induces *conditional* conservatism. In contrast to prior research, I show that there is a strong positive association between *conditional* conservatism and taxation, but only when there are imminent changes in the tax rate.

Using three different proxies for accounting conservatism including the firm-level timeliness of earnings (C-Score) (Khan and Watts, 2009) based on the Basu timeliness coefficient (Basu, 1997), cash flow and earnings skewness (Givoly and Hayn, 2000) and the persistence of negative accruals (Givoly and Hayn, 2000), I find that decreases in the corporate tax rate are significantly and positively associated with increases in firms' *conditional* conservatism in the year prior to the tax rate cut. This effect is particularly pronounced in a sub-sample of firms located in countries with a high degree of book-tax conformity. Furthermore, the findings are robust when limiting the analysis to firms that concentrate the majority of their operations in the country in which the tax rate is cut. In contrast, my tests do not provide any support for the prediction that decreases in the corporate tax go along with increases in *unconditional* conservatism.

There are several challenges in testing the relation between future tax rate cuts and accounting conservatism. Firstly, corporate tax rates remain fairly stable over longer periods of time and affect a broad number of firms making it difficult to infer causal effects.

I control for these potential concerns by drawing on a large sample of firms across 18 different countries and a 15 year sample period (1995-2010) that covers a battery of tax rate changes. Secondly, book income does not necessarily equal taxable income. Thus, tax accounting rules may partly reverse conservative accounting in financial reports. Therefore, a deferred dollar of accounting income may not fully map into a deferred dollar of taxable income depending on the degree of book-tax conformity the firm faces. I address this challenge and approximate each country's degree of book-tax conformity using an empirical book-tax conformity measure developed by Atwood, Drake, and Myers (2010). An empirical measure of book-tax conformity overcomes concerns with other measures based on subjective assessments. Third, it is empirically challenging to distinguish discretionary and mechanically driven accounting conservatism. Although managers face discretion in accounting choice to steer the level of conservatism, recent literature shows that proxies used to capture conservatism also might as well capture the non-discretionary part of accounting conservatism (Roychowdhury and Martin, 2013; Lawrence, Sloan, and Sun, 2013). I try to address this concern and proxy accounting conservatism using three different measures including the firm-specific proxy *C-Score* developed by Khan and Watts (2009). Khan and Watts (2009) show that *C-Score* is varying at the firm-level with specific events such as a significant increase in litigation risk. Lastly, multinational enterprises commonly pay taxes in various countries. Tax payments are usually based on local unconsolidated financial statements while empirical conservatism proxies mostly depend on consolidated financial data. In a robustness test I limit my analysis to firms that hold at least 90% of their assets, generate at least 90% of their sales and earn at least 90% of their income in the country in which the tax rate is cut. The results hold and are even stronger in this sub-sample of firms concentrating their activities to the country in which the tax rate is cut.



This paper aims to contribute to several streams of literature. Firstly, this paper adds to the stream of literature assessing the determinants of accounting conservatism (Ahmed and Duellman, 2007; LaFond and Watts, 2008; Lara, Osma, and Penalva, 2009; Bona-Sanchez, Perez-Aleman, and Santana-Martin, 2011). Secondly, I shed additional light on the consequences of corporate tax avoidance especially tax avoidance via inter-temporal profit shifting (Guenther, 1994; Maydew, 1997; Lin, Mills, and Zhang, 2013; Andries, Cools, and van Uytbergen, 2016). Thirdly, this paper contributes to the ongoing and topical debate on the benefits and/or drawbacks of book-tax conformity in financial accounting (Desai, 2005; Hanlon and Shevlin, 2005; Atwood, Drake, and Myers, 2010).

The paper proceeds as follows. After formulating my hypotheses using a model that explains the relation between anticipated tax rate cuts on firms' level of accounting conservatism and moderating effects of book-tax conformity in section 2, I present variations in corporate tax rates across 18 different countries from 1995 to 2010 in section 3. Section 3 also provides more details on the conservatism and book-tax conformity measures used in the study as well as details on the sample used. In section 4 I present the empirical tests and results and section 5 concludes.

## 2 Model and hypotheses

In the following I construct a model to predict the effect of corporate tax rate changes on firms' level of accounting conservatism. I assume a firm that acquires a capital stock  $K$  in  $t = 0$  that decays over two periods to keep the model as simple as possible. The capital stock economically decays at a rate  $\delta$  over time. The accounting system in place depreciates  $K$  at a rate  $\gamma$  with  $\gamma \geq \delta$ . The firms' accounting system is *unconditionally* conservative if it depreciates assets faster than their actual economic lifetime ( $\gamma > \delta$ ) or unbiased if accounting depreciation equals economic decay ( $\gamma = \delta$ ). In the first period the

capital stock experiences an unexpected downward shock to its market value  $\epsilon$ . Hence, the capital stock's total loss in economic value amounts to  $(\delta + \epsilon)K$  in the first period whereas accounting depreciation is  $\gamma K$  in the first period. The accounting system requires an impairment of the asset to its market value  $(1 - \delta - \epsilon)K$  whenever  $(\delta + \epsilon)K > \gamma K$  (news dependent or *conditional* conservatism). As a result, *unconditional* conservatism is independent from any triggering events such as economic shocks to the value of the asset and pre-empts *conditional* conservatism (Beaver and Ryan, 2005). The required impairment of the asset in the first period therefore is given by

$$\bar{\lambda} = \delta + \epsilon - \gamma. \quad (1)$$

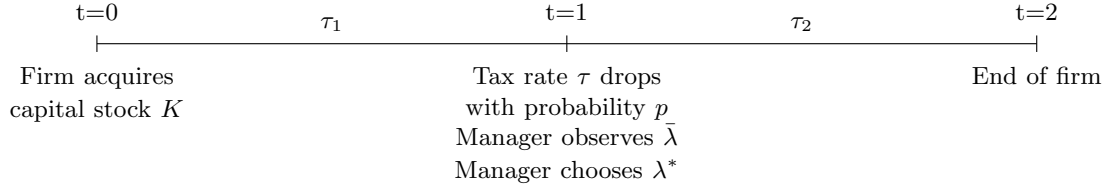
Subsequently, the required impairment  $\bar{\lambda}$  is decreasing in the level of the accounting system's unconditional conservatism  $\gamma$ . I further assume that the capital stock is fully decayed after two periods without any salvage value ( $K = 0$  in  $t = 2$ ).

I assume the firm earns cash flows  $x$  in each period  $t$  resulting in pre-tax accounting income of  $x - (\gamma + \lambda)K + x - (1 - (\gamma + \lambda))K = 2x - K$ . The firm has to pay taxes at tax rates  $\tau_t$  ( $t \in (0, 1)$ ) based on taxable income. The tax rate drops at the end of the first period with probability  $0 \leq p \leq 1$  so  $\tau_1 \geq \tau_2$  has to hold. Taxable income may diverge from pre-tax accounting income, because tax accounting provides for different accounting rules than financial accounting. Taxable income in both periods is given by  $x - \alpha(\gamma + \lambda)K + x - (1 - \alpha(\gamma + \lambda))K$  where  $\alpha$  denotes the degree of the country's book-tax conformity. I assume that the tax system has a strict revenue raising function (Hanlon, 2005) for the welfare state and does not provide any tax incentives (e.g., faster depreciation schemes), thus  $0 < \alpha < 1$  has to hold.

The manager privately observes the shock to the market value of the asset  $\epsilon$  in period

1 and chooses the impairment level  $\lambda$  for financial accounting purposes. The manager can truthfully communicate the economic downward shock to the capital stock's market value via the accounting system so  $\lambda = \bar{\lambda}$  has to hold. Alternatively, the manager can exploit the information asymmetry to impair the asset to a privately optimal degree so  $\lambda \neq \bar{\lambda}$ . Deviating from  $\bar{\lambda}$  triggers additional convex costs to the firm and/or manager  $\frac{c(\lambda - \bar{\lambda})^2}{2}$  where  $c$  denotes a fixed cost factor. Costs can be thought of as personal costs of effort to the manager to implement a privately optimal impairment level, additional expected concealment costs or penalties triggered by audits or negative capital market reactions to decreasing profits. Figure 1 illustrates the timing of the model.

**Figure 1:** Sequence of events



The manager chooses the optimal impairment  $\lambda^*$  at the end of the first period to maximize the firm's after-tax profits given by

$$\pi = 2x - K - \tau_1(x - \alpha(\gamma + \lambda)K) - (p\tau_2 + (1-p)\tau_1)(x - \alpha(1 - (\gamma + \lambda))K) - \frac{c(\lambda - \bar{\lambda})^2}{2} \quad (2)$$

with the first order condition

$$\frac{\partial \pi}{\partial \lambda} = 0. \quad (3)$$

The maximization problem solves for the optimal impairment rate  $\lambda^*$  in  $t = 1$  given by

$$\lambda^* = \bar{\lambda} + \frac{p\alpha K(\tau_1 - \tau_2)}{c}. \quad (4)$$

The model predicts several effects that are discussed in the following. Optimal impairment  $\lambda^*$  in period 1 should be interpreted as follows. *Conditional* conservatism is increasing in  $\lambda^*$ . The capital stock  $K$  is increasingly written down in the first period shifting taxable income to the lower taxed period 2. To assess the effect of a tax rate cut ( $\tau_2 < \tau_1$ ) on the optimal impairment I use the following comparative static

$$\frac{\partial \lambda^*}{\partial \tau_2} = -\frac{p \alpha K}{c} < 0. \quad (5)$$

I require strictly positive values for  $p$ ,  $\alpha$  and  $K$ . Thus, the optimal impairment rate and *conditional* conservatism is decreasing in  $\tau_2$ . Put differently, the higher the expected tax rate reduction in period 2, the higher the level of *conditional* conservatism in period 1. I therefore predict the following

*H1: Conditional conservatism is positively associated with the tax rate differential between two periods ( $\tau_2 - \tau_1$ ).*

The model also predicts the effect of the country's degree of book-tax conformity on the optimal impairment rate in the first period indicated by the following comparative static

$$\frac{\partial \lambda^*}{\partial \alpha} = \frac{p (\tau_1 - \tau_2) K}{c} > 0. \quad (6)$$

Thus the optimal impairment rate  $\lambda^*$  is strictly increasing in the country's book-tax conformity. The intuition is that if book-tax conformity is high, conservative accounting choices in financial accounting map into taxable income to a larger extent relative to countries in which book-tax conformity is low.

*H2: A positive association between firms' conditional conservatism and a future tax rate cut is especially pronounced if book and taxable income is strongly conformed (high book-tax conformity).*

### 3 Data and sample

#### 3.1 Corporate tax rate variation across countries

To answer whether firms increase conservatism in financial reporting shortly before a tax rate cut requires sufficient variation of corporate tax rates within countries and over time. However, countries do not frequently adjust their corporate tax rates making it necessary to look at larger time spans. Over the last three decades there has been a significant downward trend in corporate tax rates across countries while tax bases were usually broadened (also known as *tax rate cuts cum base broadening*). This downward trend is evident from Figures 2, 3 and 4 that show the trend of various countries' corporate tax rates from 1990 to 2015. Figure 2 presents corporate tax rates for Austria, Belgium, Denmark, Finland, France and Germany. Figure 3 shows corporate tax rates for Greece, Italy, Japan, Netherlands, Norway and New Zealand. Figure 4 represents Poland, Portugal, South Korea, Spain, Sweden and the UK.

< Insert figure 2, 3, 4 here >

On average the 18 countries outlined decreased their corporate income tax rate from 41.26% in 1990 to 26.70% in 2015. However, countries adjusted their corporate tax rates differently over time. Whereas some countries significantly decrease their corporate tax rates within one year (e.g., Austria in 2004 by 9% or Germany in 2008 by 10%), other countries have staggered corporate tax rate changes over longer periods of time. The United Kingdom, for example, decreased their corporate tax rate from 30% in 2008 to 20% in 2015 in annual steps ranging from 1% to 2%. In the used sample, I count in total 105 decreases in the corporate tax rate across 18 countries from 1995 to 2010. The average tax rate differential from one year to another year is 3.4%. I count eight major corporate tax rate cuts ( $\geq 5$  percentage points) across six countries (Austria, Belgium, Germany,

France, Italy and Norway) without any changes in the tax rate two years prior or after the drop in the tax rate. I use this variation in corporate tax rates across countries and time to analyze the question if firms' level of conservatism is positively associated with future tax rate cuts.

### 3.2 Measuring accounting conservatism

To assess the effect of corporate tax rate changes on firms' level of conservatism in financial reporting, I use three measures of accounting conservatism to proxy for *conditional* and *unconditional* conservatism. All variables are defined in detail in Table 1 in the appendix. The first proxy to measure *conditional* conservatism is *C-Score* (Khan and Watts, 2009) based on the Basu (1997) asymmetric timeliness measure. The Basu (1997) asymmetric timeliness measure captures the responsiveness of earnings to good and bad news proxied by stock market *Returns*. Specifically, earnings are regressed on stock market *Returns*, an indicator variable for negative *Returns* and the interaction between *Returns* and the indicator for negative *Returns*. If the accounting system is conservative then earnings pick up bad news (negative stock *Returns*) relatively quicker than good news (positive stock *Returns*) as indicated by a positive coefficient on the interaction term. The Basu (1997) asymmetric timeliness measure is based on annual cross-sectional regressions providing variation in conservatism only over time and not firms. In contrast, *C-Score* provides both time and cross-sectional variation as a proxy for *conditional* conservatism. Khan and Watts (2009) argue that a firm's level of *conditional* conservatism depends on its market-to-book ratio, its *Size* and *Leverage* providing cross-sectional variation across firms. *C-Score* is frequently used in recent studies that assess determinants and implications of conditional conservatism (e.g. Ahmed and Duellman (2013) or Lara, Osma, and Penalva (2014)).

*C-Score* measures the relative timeliness of earnings to bad news over good news at

the firm level and is estimated as follows. The Basu (1997) asymmetric timeliness measure serves as a start and is given by the following regression model

$$X_i = \beta_0 + \beta_1 D_i + \beta_2 R_i + \beta_3 D_i \times R_i + \epsilon_i, \quad (7)$$

where  $i$  is the firm index,  $X$  is net income before extraordinary items scaled by lagged market value of equity,  $R$  denotes annual *Returns* to proxy for news obtained by accumulating monthly *Returns* starting from the fourth month after the firm's fiscal year end,  $D$  is a dummy variable set equal to 1 if *Returns* (news) are negative ( $R < 0$ ) and set to 0 otherwise. The coefficient  $\beta_2$  picks up the responsiveness of earnings to good news (positive stock *Returns*).  $\beta_2 + \beta_3$  captures the responsiveness to bad news (negative stock *Returns*) and  $\beta_3$  captures the incremental timeliness of earnings to bad news relative to good news. Khan and Watts (2009) argue that coefficients  $\beta_2$  and  $\beta_3$  are linear functions of the firm's firm-year characteristics firm size (*Size*), market-to-book ratio (*MTB*) and *Leverage* (*Leverage*) and are defined as follows

$$\text{G-Score} = \beta_2 = \mu_1 + \mu_2 \text{Size}_i + \mu_3 \text{MTB}_i + \mu_4 \text{Leverage}_i, \quad (8a)$$

$$\text{C-Score} = \beta_3 = \lambda_1 + \lambda_2 \text{Size}_i + \lambda_3 \text{MTB}_i + \lambda_4 \text{Leverage}_i, \quad (8b)$$

where *Size* is the natural log of market value of equity, *MTB* is the firm's market-to-book ratio and *Leverage* is total debt scaled by market value of equity. Substituting equation (8a) and (8b) into regression model 7 yields the *annual cross-sectional* regression model to estimate the responsiveness of earnings to good news (*G-Score*) and the incremental

responsiveness of earnings to bad news over good news (*C-Score*) at the firm level

$$\begin{aligned}
X_i = & \beta_1 + \beta_2 D_i + R_i(\mu_1 + \mu_2 Size_i + \mu_3 MTB_i + \mu_4 Leverage_i) \\
& + D_i R_i(\lambda_1 + \lambda_2 Size_i + \lambda_3 MTB_i + \lambda_4 Leverage_i) \\
& + (\sigma_1 Size_i + \sigma_2 MTB_i + \sigma_3 Leverage_i + \sigma_4 D_i Size_i \\
& + \sigma_5 D_i MTB_i + \sigma_6 D_i Leverage_i) + \epsilon_i.
\end{aligned} \tag{9}$$

The coefficients  $\mu_i$  and  $\lambda_i$  are estimated using annual cross-sectional regressions and therefore vary over time, but not in the cross-section. The annual coefficients  $\mu_i$  and  $\lambda_i$  are then used to estimate *G-Score* (8a) and *C-Score* (8b). Cross-sectional variation in *C-Score* is added through cross-sectional variation in firm-level characteristics (Size, *MTB* and Leverage). Thus, *C-Score* measures firm-level conservatism across years. *Conditional* conservatism is increasing in *C-Score*.

The second measure for conservatism, *Con-Acc*, measures *unconditional* conservatism and captures the persistent use of negative accruals (Givoly and Hayn, 2000; Ahmed, Billings, Morton, and Stanford-Harris, 2002). I define *Con-Acc* in line with prior research as net income before extraordinary items less cash flow from operations plus depreciation expense deflated by average total assets and averaged over the previous three years, multiplied by negative one (Ahmed and Duellman, 2013). *Unconditional* conservatism is increasing in *Con-Acc*.

The last measure to proxy for *unconditional* conservatism is *Skewness* and is defined as the difference between cash flow skewness and earnings skewness (Givoly and Hayn, 2000; Ahmed and Duellman, 2013). Put formally, earnings and cash flows skewness are defined as  $(x - \mu)^3 / \sigma^3$  where  $\mu$  and  $\sigma$  are the mean and standard deviation of earnings and cash flows over the last five years. Unconditional conservatism is increasing in *Skewness*.



### 3.3 Measuring book-tax conformity

To assess the effects of book-tax conformity on the association between future tax rate cuts and accounting conservatism, I draw on the book-tax conformity measure developed by Atwood, Drake, and Myers (2010). Atwood, Drake, and Myers (2010) define book-tax conformity as “*the flexibility that a firm has to report taxable income that is different from pre-tax book income*”. They base their measure of book-tax conformity on the conditional variance of yearly tax expense in a country for a given level of pre-tax income. To construct the measure Atwood, Drake, and Myers (2010) use annual cross-sectional regressions of current tax expense on pre-tax book income, estimated foreign pre-tax book-income and total dividends all scaled by total assets. Accordingly, the root mean-squared error (RMSE) from the regression provides an unbiased estimate of the standard error indicating the range of tax expense the firm can report for a given level of pre-tax income. Higher (lower) values of RMSE indicate a broader range of reported tax expense per unit of pre-tax income suggesting a lower (higher) degree of book-tax conformity for the country-year.

< Insert Table 2 here >

I construct the Atwood, Drake, and Myers (2010) yearly book-tax conformity measure for each of the 18 countries in the sample. Table 2 reports the average value of RMSE over the whole sample period for each country and provides values of RMSE provided in Atwood, Drake, and Myers (2010) for comparison. I construct a rank for each country in each year *BTCRank* that indicates the country’s degree of book-tax conformity in the respective year according to RMSE. A higher (lower) rank indicates a higher (lower) degree of book-tax conformity. The results are comparable to reported values of RMSE by Atwood, Drake, and Myers (2010). Differences in values are potentially attributable to

differences in sample years. The sample years used in Atwood, Drake, and Myers (2010) range from 1992 to 2005. My measure is constructed for sample years from 1995 to 2010.

I acknowledge that there are additional measures to proxy for a country’s degree of required book-tax conformity. For example, Watrin, Ebert, and Thomsen (2014) construct a measure of a country’s degree of book-tax conformity using firms’ unconsolidated financial accounts. This approach potentially provides a more accurate measure as tax payments of European firms are based on unconsolidated financial statements. In contrast, consolidated financial accounts comprise tax payments in various countries and are subject to a consolidation process. However, the measure is limited to European countries. Although my sample mainly comprises European countries, data limitation on firms’ unconsolidated accounts prior to the year 2007 restrict my analysis on the Atwood, Drake, and Myers (2010) book-tax conformity measure. Using an empirical measure overcomes challenges with other existing measures on book-tax conformity that rank countries based on subjective assessments of a country’s degree of book-tax conformity such as Alford, Jones, Leftwich, and Zmijewski (1993) or Hung (2000).

### **3.4 Sample and descriptive statistics**

To test my hypotheses I draw on firm-level and stock return data retrieved from the Datastream and Worldscope database provided by Thomson Reuters to construct a panel of 37,880 firm-year observations ranging from 1995 to 2010. A 15-year time span from 1995 to 2010 covers a broad range of tax rate changes in various countries. The final sample comprises firms located in 18 different countries. As conditional conservatism proxies require stock return data to measure the timeliness of bad news recognition (proxied by *Returns*) in firms’ earnings, my sample is restricted to publicly listed firms. Table 3 provides an overview of the number of firms and firm-year observations per country in the

sample.

< Insert Table 3 here >

To build the sample, I start with all listed firms in the Thomson Reuters' Worldscope database from 1995-2010 (168,227 observations) and drop observations with missing observations required for (in)dependent variables (less 115,025). Further I drop observations with stock prices less than USD 1 in line with Khan and Watts (2009) to construct *C-Score*. Next, I eliminate firm-year observations with market values less than USD 10,000 and observations in the 1st and 99th percentile of observations (less 14,017) to prevent outliers from distorting the results (Becker, Jacob, and Jacob, 2013). The final sample comprises 37,880 firm-year observations and 4,835 unique firms across 18 countries. I acknowledge that eliminating observations in the 1st and 99th percentile of observations significantly reduces the sample size. However, the sample's final size is comparable to other studies using Worldscope data (e.g. (Becker, Jacob, and Jacob, 2013)). Table 4 presents the sample selection in detail.

< Insert Table 4 here >

Table 5 summarizes all descriptive statistics of the sample. Although my sample differs from other studies in that I also include non-U.S. firms, my results for *C-Score*, *Skewness* and *Con-Acc* are comparable. The mean (median) of *C-Score* is 0.062 (0.023) for my sample which is comparable to other studies. For example, Ahmed and Duellman (2013) report a mean *C-Score* of 0.060 while Lara, Osma, and Penalva (2014) report a mean *C-Score* of 0.098. Also the mean of *Con-Acc* is comparable to Ahmed and Duellman (2013). The mean of *Skewness* is less compared to other studies. Note that *Con-Acc* and *Skewness* have fewer observations (26,844 and 9,543) since both measures require consecutive data points over time. However, the comparable results of *C-Score*, *Skewness* and *Con-Acc*

provide some comfort that the proxies are correctly estimated. The average firm in the sample is relatively large (mean for *Size* is 15.415) compared to studies that sample U.S. firms. I attribute this to the fact that capital markets outside the U.S. are usually limited to larger firms. The mean (median) of *Leverage* is 0.835 (0.342), of *Sales growth* 0.086 (0.047) and of *Op. cashflow* 0.146 (0.108). The mean (median) of *MTB* is 1.896 (1.357) and of *CEO shares* 0.004 (0.001). In line with prior research I set missing values for R&D expense equal to zero resulting in a left skewed distribution of R&D expense with mean (median) of 0.019 (0.000). The descriptive statistics are comparable to conventional levels.

< Insert Table 5 here >

## 4 Empirical tests and results

First, I test if firms' level of accounting conservatism is positively associated with an imminent tax rate cut. I define a large tax rate cut as a reduction in the corporate tax rate of 5 percentage points or more without any changes in the corporate tax rate two years before or after the tax rate is cut. However, I cannot control for additional changes affecting the tax base. While there potentially has not been a significant change in the *effective* tax rate, earlier research on the salience of statutory tax rates provide some comfort that firms respond to changes in the *statutory* tax rate and not so much to changes in the *effective* tax rate (Buettner and Ruf, 2007; Blaufus, Bob, Hundsdoerfer, Kieseewetter, and Weimann, 2013; Amberger, Eberhartinger, and Kasper, 2016).

In total, the sample comprises five large tax rate cuts across four countries: Austria, Belgium, Germany and Italy (twice). Figure 5 and 6 provide a first indication of firms' level of *conditional* conservatism around a large tax rate cut. Figure 5 pools all firm-year observations of the four countries and plots the average value of *C-Score* over time. The year in which the tax rate is cut is indicated by  $t = 0$ . Hypothesis 1 indicates that firms

increase *conditional* conservatism when a tax rate cut is imminent. Three years before the tax rate cut the mean of *C-Score* across the four countries is about 0.02 and increases to 0.25 one year before the tax rate is cut. In the following three years the mean of *C-Score* decreases again to approximately 0.08. Accordingly, *C-Score* increases and peaks in the year before the tax rate cut just to flatten again after the tax rate cut providing some first evidence in support of hypothesis 1. The response in *C-Score* is comparable to event studies provided by Khan and Watts (2009) who show a steep increase in *conditional* conservatism around an increase in firms' litigation risk.

< Insert Figure 5 here >

Figure 6 provides an indication for the shift in the distribution of *C-Score*. Two years before the tax rate cut the distribution of *C-Score* is centered around its mean with a high density. In the year of the tax rate cut the distribution of *C-Score* shifts to the right.

< Insert Figure 6 here >

I further perform the following multivariate tests. In a first step, I regress each of the three conservatism measures on a dummy variable *Event* that takes value one if a large tax rate cut is one year ahead and a vector of control variables *X*

$$Con_{i,t} = \gamma_0 + \gamma_1 Event_{k,t+1} + \delta X_{i,t} + \epsilon, \quad (R1)$$

where  $Con_{i,t}$  is one of the three conservatism measures *C-Score*, *Skewness* and *Con-Acc* for firm *i* in year *t*. The subscript *k* indicates variables for country *k*. If firms' level of conservatism is positively associated with a large tax rate cut in the next year (hypothesis 1), then the coefficient  $\gamma_1$  should be positive and significant. I further construct a sub-sample of firms in countries with high book-tax conformity (*HighBTC*) and low book-tax conformity. *HighBTC* takes value one if the country ranks above the median of *BTCRank* in

the current year and zero otherwise. I estimate R1 separately for both sub-samples to test hypothesis 2. If a positive association between the level of conservatism and a large tax rate cut is stronger in countries with high book conformity, then the coefficient  $\gamma_1$  should be larger in the *HighBTC* sub-sample. In line with previous research I control for firms' *Size* as larger firms tend to be less conservative in accounting (Givoly and Hayn, 2007) as well as profitability (*Returns* and *Op. cashflow*). Furthermore, I expect firms with higher degrees of managerial ownership measured by *CEO shares* to apply less conservative accounting as these firms draw on more informal ways to decrease information asymmetries. In line with Roychowdhury and Watts (2007) I also control for the market-to-book ratio. Following Ahmed, Billings, Morton, and Stanford-Harris (2002) I expect *Leverage* to affect conservatism who find that firms with higher conflicts between bondholders and shareholders induce higher levels of conservatism. *Sales growth* may affect unconditional conservatism due to increases in accruals (Ahmed and Duellman, 2007). *R&D expenses* are usually directly expensed increasing unconditional conservative measures. Lastly, I include country and industry-year fixed effects to account for unobserved and time invariant effects. I cluster all standard errors at the firm-level (Petersen, 2009).

< Insert Table 6 here >

Table 6 presents results of estimating equation (R1). In columns (1) to (4) I report the effect of a major tax rate cut on firms' *conditional* conservatism measured by *C-Score* and a long-run measure over three years *3 yr. C-Score*. The coefficient  $\gamma_1$  on *Event* is positive and statistically significant ( $p < 0.001$ ) indicating that firms' level of *conditional* accounting conservatism is increasing if a large tax rate cut is one year ahead. In contrast, for *Skewness* (columns (5) and (6)) and *Con-Acc* (columns (7) and (8)) the coefficient  $\gamma_1$  on *Event* is not statistically significant at conventional levels providing some evidence that future tax rate cuts have no effect on firms' *unconditional* conservatism. Together, these

findings provide support for hypothesis 1 that firms' level of *conditional* conservatism is positively associated with future tax rate cuts.

< Insert Table 7 here >

In Table 7 I present results of estimating equation (R1) separately using a sub-sample of firms facing high book-tax conformity and firms located in countries with low book-tax conformity. The coefficient  $\gamma_1$  on *Event* is positive and statistically significant ( $p < 0.001$ ) in the sub-sample of firms with strong book-tax conformity (column (1)). In contrast, the coefficient  $\gamma_1$  on *Event* is negative and statistically significant at the 5%-level in the sub-sample of firms with low book-tax conformity (column (4)). In contrast, for *Skewness* (columns (5) and (6)) the coefficient  $\gamma_1$  on *Event* is not statistically significant at conventional levels (columns (2) and (5)). For *Con-Acc*  $\gamma_1$  is not statistically significant in the high book-tax conformity sub-sample (column (3)), but positive and statistically significant at the 10%-level in the low book-tax conformity sub-sample (column (6)). These results give support for hypothesis 2 that the increase of *conditional* conservatism is concentrated in firms with high book-tax conformity. The previous results provide support for both hypothesis 1 and 2. Whereas firms' *conditional* conservatism is positively associated with a large tax rate cut in the next year, *unconditional* conservatism is not. This effect, however, is concentrated in firms facing strong book-tax conformity.

In a second test, I use a continuous measure for tax rate changes  $\Delta CIT$  to test my predictions. In particular, I regress the change of each conservatism measure ( $\Delta Con$ ) on the expected change in the corporate tax rate one year ahead ( $\Delta CIT$ ) and a vector of control variables  $X$ . All variables are in first-differences ( $\Delta$ ).

$$\Delta Con_{i,t} = \beta_0 + \beta_1 \Delta CIT_{k,t+1} + \delta \Delta X_{i,t} + \epsilon. \quad (R2)$$

Positive values of  $\Delta CIT$  indicate a tax rate cut. Therefore, if tax rate cuts in the next period are positively associated with the conservatism level in the current year (hypothesis 1) the coefficient  $\beta_1$  should be positive and significant. This effect should be pronounced in the high book-tax conformity sub-sample if hypothesis 2 holds.

Table 8 presents results of estimating equation (R2) for the full sample. For  $\Delta C-Score$  the coefficient  $\beta_1$  is positive and significant ( $p < 0.001$ ) (column (1) and (2)). For  $\Delta Con-Acc$   $\beta_1$  is insignificant. For  $\Delta Skewness$   $\beta_1$  is positive and significant at the 10%-level. These results corroborate hypothesis 1 that firms' level of *conditional* conservatism is positively associated with a reduction in the tax rate in the following year.

< Insert Table 8 here >

Table 9 presents the results of estimating equation (R2) using the high and low book-tax conformity sub-sample. For  $C-Score$ , the coefficient  $\beta_1$  on  $\Delta CIT$  is positive and significant ( $p < 0.001$ ) in the high book-tax conformity sub-sample and negative and significant at the 1%-level in the low book-tax conformity sub-sample. This provides some support for hypothesis 2 that a positive association between *conditional* conservatism in the current year and a tax rate cut in the next year is especially pronounced for firms facing high book-tax conformity. In contrast,  $\beta_1$  is insignificantly different from zero for  $Skewness$  in the high book-tax conformity sub-sample and for  $Con-Acc$  in both sub-samples.

< Insert Table 9 here >

Together the results suggest that firms' level of *conditional* conservatism is positively associated with a tax rate cut in the next period. The positive association is especially pronounced for firms facing high book-tax conformity. In contrast, the results suggest that there is no positive association between *unconditional* conservatism and future tax rate cuts.



#### 4.1 Robustness tests

To corroborate the previous results I conduct the following additional robustness tests. A potential concern using consolidated data could be that the data also includes income and tax payments associated with foreign operations that are not affected by a tax rate cut in the headquarters' country. An increasing share of foreign income and tax payments would then mitigate the firms' incentive for increasing conservatism prior to a tax rate cut in the home country. This concern would curb the previous results. To mitigate this concern I run the previous tests in a sub-sample of domestic firms that cumulatively meet the following requirements. Firstly, the firm holds at least 90% of its assets in the headquarters' country. Secondly, the firm earns at least 90% of its pre-tax income in the headquarters' country. Lastly, the firm has at least 90% of sales in the headquarters' country. In total this leaves me with a sub-sample of domestic firms of 8,607 firm-year observations for *C-Score* and all control variables. I estimate both equation (R1) and (R2) again using the sub-sample of domestic firms.

< Insert Table 10 here >

Table 10 and 11 present results for the tests using the sub-sample of domestic firms. All previous results also hold in the sub-sample of domestic firms. More importantly, the coefficients  $\gamma_1$  and  $\beta_1$  are larger and statistically significant compared to the full sample used in the previous tests indicating that the effect is larger for firms with the majority of operations in the country in which the tax rate is reduced. For *C-Score* the coefficient  $\gamma_1$  on *Event* increases from 0.247 using the full sample (Table 6, column (1)) to 0.697 (Table 10, column (1)) using the full *domestic* sub-sample. Note that the adjusted  $R^2$  almost doubles from 4.8% using the full sample to 9.5% using the full *domestic* sub-sample suggesting that more of the variation in *C-Score* is explained by home-country

operations. Also the coefficient  $\gamma_1$  on *Event* increases from 0.816 using the full sample for high book-tax conformity firms (Table 7, column (1)) to 1.201 using the *domestic* sub-sample for high book-tax conformity firms (Table 10, column (4)) corroborating hypothesis 1. Furthermore, the coefficient  $\gamma_1$  on *Event* is insignificant for domestic and low book-tax conformity firms (Table 10, column (7)) providing more evidence for hypothesis 2. I find comparable results for estimating equation (R2) again in a sub-sample of domestic firms (see Table 11).

< Insert Table 11 here >

The robustness tests provide some more evidence for hypothesis 1 and 2 and show that the effect is especially pronounced for firms concentrating the majority of their operations in the home country.

## 5 Conclusion

This study analyzes the relation between reductions in the corporate tax rate and firms' conditional and unconditional accounting conservatism. In particular, I analyze whether firms' accounting conservatism is positively related to future tax rate cuts. Additionally, I test if a positive relation between accounting conservatism and future tax rate cuts is specifically pronounced when book and taxable income is strongly conformed. Because timelier loss recognition shifts taxable income into the lower taxed future, firms have an incentive to increase conservatism shortly before the tax rate is cut. If book-tax conformity is strong then timelier loss recognition for book income also affects taxable income.

Using a sample of firms across 18 countries and 15 years (1995 to 2010), I find that firms' *conditional* conservatism is significantly positively related to future tax rate cuts if book and taxable income is strongly conformed. In contrast there is no significant relation between *unconditional* conservatism and future tax rate cuts. These results are especially

pronounced for firms that concentrate the majority of their operations in the country in which the corporate tax rate is cut.

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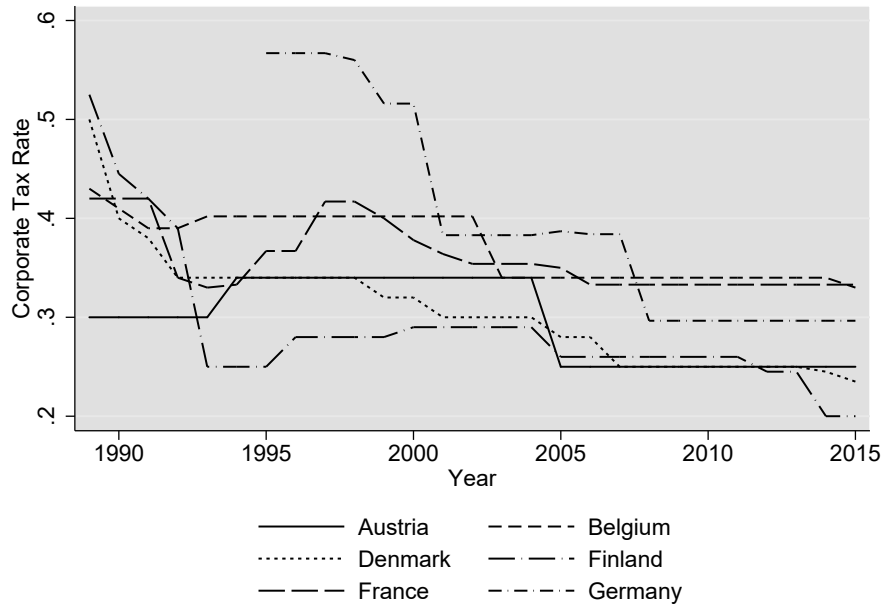
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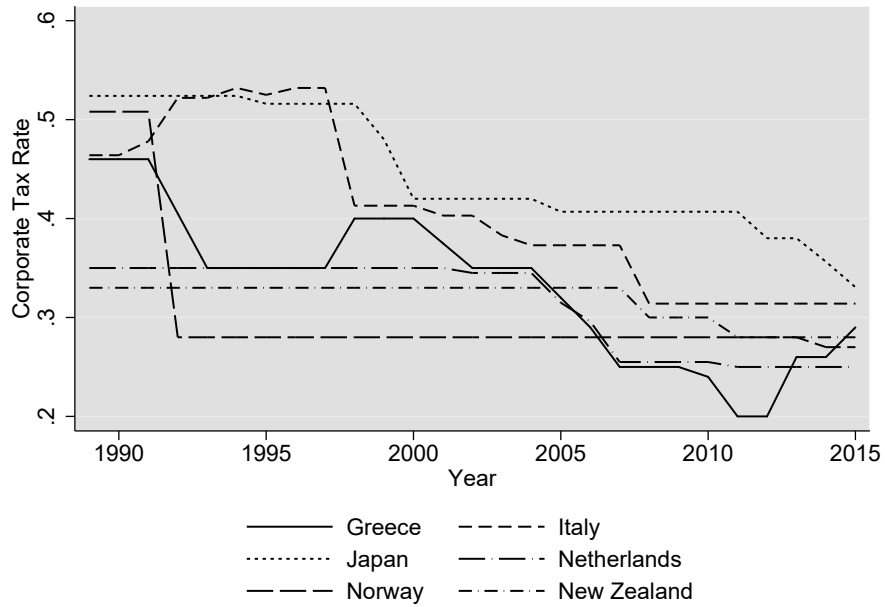
## Appendix

**Figure 2:** *Corporate Tax Rates (Austria, Belgium, Denmark, Finland, France, Germany)*

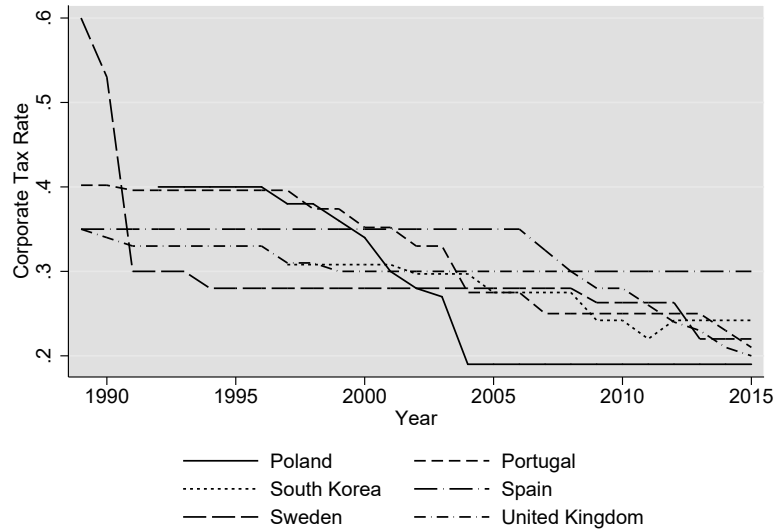




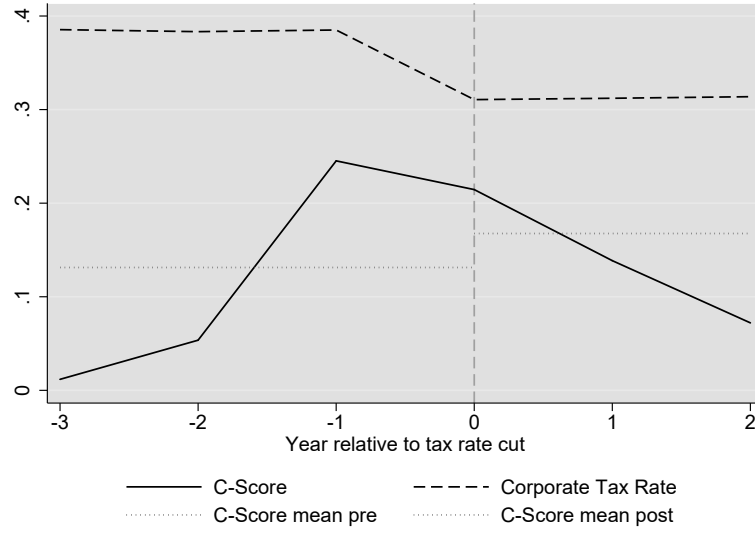
**Figure 3:** Corporate Tax Rates (Greece, Italy, Japan, Netherlands, Norway, New Zealand)



**Figure 4:** Corporate Tax Rates (Poland, Portugal, South Korea, Spain, Sweden, United Kingdom)

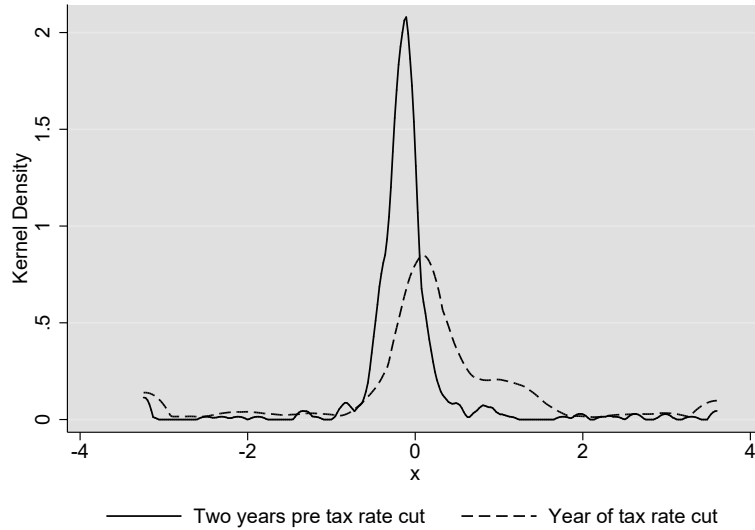


**Figure 5:** *Accounting Conservatism over time around major tax rate cut*



This figure shows the level of *C-Score* over time relative to the year the tax rate is cut. The figure pools all observations from countries with a large tax rate cut ( $\geq 5$  percentage points without any tax rate changes two years prior or after the tax rate cut).  $t = 0$  indicates the year in which the tax rate is cut.

**Figure 6:** *Density of C-Score*



This figure shows the kernel density of *C-Score* two years prior a large tax rate cut ( $\geq 5$  percentage points without any tax rate changes two years prior or after the tax rate cut) and in the year of the tax rate cut. Observations from countries with a large tax rate cut are pooled.

**Table 1: Variable definitions**

Variable	Description
<b>Accounting conservatism measures</b>	
<i>C-Score</i>	First annual coefficients $\lambda_i$ and $\sigma_i$ are estimated with annual cross-sectional regressions using regression model 9. $\lambda_i$ and $\sigma_i$ vary over time, but not across firms. $\lambda_i$ and $\sigma_i$ are then used to estimate <i>C-Score</i> and <i>G-Score</i> by plugging the coefficients into equations 8a and 8b. <i>C-Score</i> and <i>G-Score</i> vary over time and across firms. For a detailed description see section 3.2 and Khan and Watts (2009).
<i>Con-Acc</i>	Net income before extraordinary items (Worldscope: WC01551) less cashflow from operations (Worldscope: WC04201) plus depreciation expense (Worldscope: WC01151) deflated by average total assets (Worldscope: WC02999) and averaged over the previous three years, multiplied by negative one. See also: Ahmed and Duellman (2013).
<i>Skewness</i>	<i>Skewness</i> is defined as the difference between cash flow and earnings skewness: $(x - \mu)/\sigma^3$ , where $\mu$ and $\sigma$ are the mean and standard deviation of earnings and cash flows over the last five years. See also: Givoly and Hayn (2000), Ahmed and Duellman (2013).
<b>Tax measures</b>	
$\Delta CIT$	Corporate tax rate differential between year $t$ and year $t+1$ ( $CIT_t - CIT_{t+1}$ ). Thus, positive values of $\Delta CIT$ indicate a decrease in the tax rate in the next year.
<i>Event</i>	Dummy variable set equal to one if the corporate tax rate drops at least by 5% from $t$ to $t+1$ and no changes in the corporate tax rate occur two years before or after the tax rate drop.
<i>BTCRank</i>	Scaled rankings of countries' degree of book-tax conformity according to (Atwood, Drake, and Myers, 2010). The ranks are based on the root mean-squared error (RMSE) from the following model estimated by country-year: $CTE_t = \alpha + \beta_1 PTBI_t + \beta_2 ForPTBI + \beta_3 DIV_t + \epsilon_t$ , where <i>CTE</i> is current tax expense (WC01451), <i>PTBI</i> is pre-tax income (WC01401), <i>ForPTBI</i> is foreign pre-tax income (WC07126) and <i>DIV</i> is dividends paid (WC04551).
<i>CEO shares</i>	<i>CEO shares</i> is the percentage of closely held shares (Worldscope: WC08021) in total outstanding shares (Worldscope: WC05301).
<i>Domestic</i>	Dummy variable that takes value one if the firm reports less than 10 percent of income (Worldscope: WC08741), sales (Worldscope: WC08731) and assets (Worldscope: WC08736) as foreign (see also Lester and Langenmayr (2017), Creal, Robinson, Rogers, and Zechman (2014), Osswald and Sureth-Sloane (2017)).

*Table 1: Variable definitions continued*

Variable	Description
<b>Control variables</b>	
<i>Earnings</i>	<i>Earnings</i> is net income before extraordinary items (Worldscope: WC01551) scaled by lagged market value of equity.
<i>Leverage</i>	Leverage is defined as total debt (Worldscope: WC03255) deflated by market value of equity.
<i>MTB</i>	<i>MTB</i> is end-of-year market value of equity (Datastream: MV) deflated by book value of equity (Worldscope: WC03501).
<i>Op. cashflow</i>	<i>Operating cashflow</i> is the cashflow from operations (Worldscope: WC04201) deflated by market value of equity.
<i>R&amp;D expense</i>	<i>R&amp;D expense</i> is annual R&D expenses (Worldscope: WC01201) deflated by market value of equity.
<i>Returns</i>	Returns are annual <i>Returns</i> compounded from monthly <i>Returns</i> beginning the fourth month after the firm's fiscal year end.
<i>Sales growth</i>	<i>Sales growth</i> is the percentage of annual growth in the firm's total sales (Worldscope: WC01001).
<i>Size</i>	<i>Size</i> is the natural log of market value of equity. (Datastream: MV)

*Table 2: Book-tax conformity by country*

	<b>Avg. RMSE</b>	<b>Avg. RMSE</b> (Atwood et al. 2010)	<b>BTCRank</b>
Japan	0.006	0.008	0.810
Portugal	0.006	n.a.	0.762
South Korea	0.007	n.a.	0.757
Poland	0.007	n.a.	0.746
Austria	0.008	0.009	0.731
Finland	0.008	0.010	0.681
Italy	0.008	0.010	0.646
Spain	0.008	0.008	0.625
Greece	0.010	0.014	0.576
Netherlands	0.010	0.009	0.525
New Zealand	0.010	0.013	0.488
Denmark	0.010	0.010	0.470
France	0.010	0.008	0.438
United Kingdom	0.012	0.010	0.301
Sweden	0.012	0.012	0.278
Norway	0.014	0.013	0.229
Germany	0.014	0.016	0.213
Belgium	0.014	0.014	0.192

This table presents the average book-tax conformity over the sample period from 1995-2010 by country based on Atwood, Drake, and Myers (2010). BTCRank is based on the root mean-squared error (RMSE) from the following model estimated by country-year:  $CTE_t = \alpha + \beta_1 PTBI_t + \beta_2 ForPTBI + \beta_3 DIV_t + \epsilon_t$ . The average RMSE by (Atwood, Drake, and Myers, 2010) is given for comparison (sample period 1992-2005). Higher (lower) RMSE indicate lower (higher) book-tax conformity. BTCRank is the average rank of each country over the whole sample period. Higher (lower) BTCRank indicates higher (lower) book-tax conformity.

*Table 3: Sample composition*

<b>Country</b>	<b>N (Firms)</b>	<b>N (Obs.)</b>	<b>Country</b>	<b>N (Firms)</b>	<b>N (Obs.)</b>
Austria	56	363	Netherlands	70	597
Belgium	87	660	Norway	90	644
Denmark	92	778	New Zealand	48	345
Finland	91	762	Poland	116	569
France	390	3,107	Portugal	31	201
Germany	383	2,700	South Korea	596	3,010
Greece	73	266	Spain	93	695
Italy	167	1,020	Sweden	176	1,356
Japan	1,587	15,802	United Kingdom	689	5,005

This table summarizes 37,880 firm-year observations across 18 countries in my sample from 1995-2010.

*Table 4: Sample Selection*

Step	Description	Observations	
		dropped	remaining
1	All firms listed in Thomson Reuters' Worldscope Database from 1995-2010 for the 18 countries selected		168,227
2	Drop observations with missing or market value (MV) < \$ 10.000	76,767	91,460
3	Drop observations with missing or negative book value (WC01551)	8,731	82,729
4	Drop observations with missing or negative total assets (WC02999)	12	82,717
5	Drop observations with missing sales (WC01001)	75	82,642
6	Drop observations with missing net income before extraordinary items (WC01551)	30	82,612
7	Drop observations with missing total debt (WC03255)	84	82,528
8	Drop observations with missing operating cash flow (WC04201)	847	81,681
9	Drop observations with missing common shares outstanding (WC05301)	52	81,629
10	Drop observations with missing closely held shares (WC08021)	28,427	53,202
11	Drop observations with less than \$1 of stock price in line with Khan and Watts (2009)	1,305	51,897
12	Drop observations of all dependent and independent variables not within 1st and 99th percentile of observations Becker, Jacob, and Jacob (2013)	14,017	37,880

This table presents the steps undertaken to retrieve the sample used. The final sample comprises 37,880 firm-year observations for 4,835 firms. Table 3 presents an overview of the distribution across countries.

**Table 5:** *Descriptive statistics*

<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>St. Dev.</b>	<b>Min.</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Max.</b>
<i>C-Score</i>	37,880	0.062	0.794	-3.480	-0.064	0.023	0.116	4.612
<i>Skewness</i>	9,543	0.080	1.537	-5.298	-0.557	0.042	0.652	7.768
<i>Con-Acc</i>	26,844	0.004	0.019	-0.073	-0.004	0.003	0.013	0.089
<i>Size</i>	37,880	15.415	2.981	9.427	12.851	15.891	17.753	21.718
<i>Returns</i>	37,880	0.080	0.423	-1.174	-0.181	0.057	0.322	1.740
<i>MTB</i>	37,880	1.896	1.796	0.142	0.853	1.357	2.254	16.185
<i>Leverage</i>	37,880	0.835	1.522	0.000	0.082	0.342	0.903	17.011
<i>Sales Growth</i>	37,880	0.086	0.258	-0.635	-0.030	0.047	0.145	2.235
<i>Op. Cashflow</i>	37,880	0.146	0.182	-0.384	0.061	0.108	0.183	1.851
<i>R&amp;D expense</i>	37,880	0.019	0.041	0.000	0.000	0.000	0.019	0.368
<i>CEO shares</i>	37,880	0.004	0.012	0.000	0.000	0.001	0.003	0.166

This table presents descriptive statistics of the main variables for 4,835 firms and 37,880 firm-year observations over the sample period from 1995-2010. Observations for all continuous variables in the 1st and 99th percentile are eliminated. Variables are defined in Table 1.

Table 6: Effect of major tax rate cuts on firms' accounting conservatism

<i>Event</i>	C-Score		3 yr. C-Score		Skewness		Con-Acc	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Size</i>	<b>0.247***</b> (0.056)	<b>0.247***</b> (0.056) -0.019***	<b>0.178***</b> (0.037)	<b>0.181***</b> (0.037) -0.023***	<b>-0.041</b> (0.118)	<b>-0.030</b> (0.110) -0.120***	<b>0.000</b> (0.001) -0.000	<b>0.001</b> (0.001) (0.000)
<i>Returns</i>		(0.003) -0.010		(0.003) -0.017**		(0.014) -0.669***		(0.000) -0.000
<i>MTB</i>		(0.010) -0.001		(0.007) 0.001		(0.049) 0.000		(0.000) 0.002***
<i>Leverage</i>		(0.004) 0.005		(0.003) 0.000		(0.016) 0.108***		(0.000) -0.001***
<i>Sales Growth</i>		(0.007) -0.003		(0.007) -0.005		(0.021) -0.578***		(0.000) -0.000
<i>Op. cashflow</i>		(0.021) 0.048		(0.014) 0.017		(0.106) 0.791***		(0.001) 0.021***
<i>R&amp;D expense</i>		(0.034) -0.038		(0.031) -0.099		(0.199) 2.054***		(0.001) 0.001
<i>CEO shares</i>		(0.071) -0.824**		(0.070) -1.050***		(0.494) -7.004***		(0.004) -0.040**
		(0.331)		(0.333)		(1.689)		(0.016)
Observations	37,880	37,880	28,608	28,608	9,543	9,543	26,844	26,844
Adjusted R <sup>2</sup>	0.047	0.048	0.121	0.127	0.106	0.163	0.059	0.096
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents regression results on firms' accounting conservatism over the sample period 1995-2010. All specifications are estimated using OLS regressions. Specification (1) to (4) estimate the effect of major tax rate cuts ( $\geq 5$  percentage points) on firms' level of conditional conservatism (*C-Score*) and long-run conditional conservatism ( $\beta$  *yr. C-Score*). Specifications (5) to (8) estimate the effect of major tax rate cuts ( $\geq 5\%$ ) on firms' unconditional conservatism measured as *Skewness* and *Con-Acc*. All variable definitions are presented in Table 1. All specifications include country and industry-year fixed effects. Robust standard errors clustered at the firm level are given in parentheses. \*, \*\*, \*\*\* denote significance levels at the 10%, 5% and 1% level.



**Table 7: Effect of major tax rate cut across high and low book-tax conformity countries**

	High Book-Tax Conformity			Low Book-Tax Conformity		
	C-Score (1)	Skewness (2)	Con-Acc (3)	C-Score (4)	Skewness (5)	Con-Acc (6)
<i>Event</i>	<b>0.816***</b>	<b>-0.400</b>	<b>-0.001</b>	<b>-0.079**</b>	<b>0.073</b>	<b>0.003*</b>
	<b>(0.156)</b>	<b>(0.346)</b>	<b>(0.001)</b>	<b>(0.036)</b>	<b>(0.118)</b>	<b>(0.001)</b>
<i>Size</i>	-0.025***	-0.146***	-0.000	-0.013***	-0.104***	0.000
	(0.004)	(0.025)	(0.000)	(0.003)	(0.016)	(0.000)
<i>Returns</i>	-0.106***	-0.830***	0.000	0.024	-0.580***	-0.001
	(0.016)	(0.086)	(0.000)	(0.015)	(0.065)	(0.001)
<i>MTB</i>	0.001	0.023	0.002***	0.000	-0.013	0.002***
	(0.006)	(0.030)	(0.000)	(0.004)	(0.020)	(0.000)
<i>Leverage</i>	-0.015**	0.145***	-0.001***	0.043***	0.103***	-0.001***
	(0.006)	(0.034)	(0.000)	(0.010)	(0.026)	(0.000)
<i>Sales Growth</i>	0.101***	-0.675***	-0.001	-0.056***	-0.465***	0.001
	(0.038)	(0.170)	(0.001)	(0.020)	(0.137)	(0.001)
<i>Op. cashflow</i>	0.007	0.479	0.023***	0.045	0.885***	0.019***
	(0.049)	(0.332)	(0.002)	(0.044)	(0.251)	(0.002)
<i>R&amp;D expense</i>	-0.032	0.747	-0.010*	0.032	2.477***	0.008
	(0.124)	(0.872)	(0.006)	(0.081)	(0.580)	(0.005)
<i>CEO shares</i>	-1.671**	-9.069***	-0.056**	-0.350	-5.790***	-0.031
	(0.811)	(3.253)	(0.024)	(0.309)	(1.868)	(0.021)
Observations	19,892	3,844	13,681	17,988	5,699	13,163
Adjusted $R^2$	0.096	0.097	0.125	0.121	0.163	0.082
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

This table presents regression results on firms' accounting conservatism over the sample period 1995-2010. All specifications are estimated using OLS regressions based on estimation R1 using a sub-sample of high book-tax conformity and low book-tax conformity countries. High book-tax conformity is defined as observations above the median of *BTCRank*. Specification (1) to (4) estimate the effect of major tax rate cuts ( $\geq 5$  percentage points) on firms' level of conservatism (*C-Score*, *Skewness*, *Con-Acc*) for firm-year observations in high book-tax conformity countries. Specification (5) to (8) estimate the effect of major tax rate cuts ( $\geq 5$  percentage points) on firms' level of conservatism (*C-Score*, *Skewness*, *Con-Acc*) for firm-year observations in low book-tax conformity countries. All variable definitions are presented in Table 1. All specifications include country and industry-year fixed effects. Robust standard errors clustered at the firm level are given in parentheses. \*, \*\*, \*\*\* denote significance levels at the 10%, 5% and 1% level.

**Table 8:** *Effect of corporate tax rate changes on firms' accounting conservatism*

	$\Delta$ C-Score		$\Delta$ 3 yr. C-Score		$\Delta$ Skewness		$\Delta$ Con-Acc	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\Delta CIT$	<b>2.466***</b> (0.379)	<b>2.472***</b> (0.382)	<b>0.324</b> (0.206)	<b>0.300</b> (0.209)	<b>0.678</b> (1.908)	<b>2.937*</b> (1.720)	<b>0.006</b> (0.007)	<b>0.007</b> (0.006)
$\Delta Size$		0.034 (0.026)		0.030*** (0.009)		-1.067*** (0.115)		-0.001* (0.001)
$\Delta Returns$		-0.002 (0.013)		0.001 (0.004)		-0.427*** (0.047)		-0.000 (0.000)
$\Delta MTB$		0.002 (0.010)		-0.004 (0.003)		0.102** (0.041)		0.002*** (0.000)
$\Delta Leverage$		0.039** (0.018)		0.015** (0.006)		0.097** (0.049)		-0.001*** (0.000)
$\Delta Sales Growth$		-0.013 (0.032)		-0.005 (0.011)		-0.267** (0.107)		-0.001* (0.000)
$\Delta Op. cashflow$		0.000 (0.060)		-0.030 (0.022)		2.985*** (0.319)		0.017*** (0.001)
$\Delta R\&D expense$		0.507** (0.213)		0.154* (0.088)		0.092 (1.388)		0.002 (0.003)
$\Delta CEO shares$		-1.616 (3.731)		-0.166 (0.995)		-4.316 (6.720)		-0.052** (0.024)
Observations	32,158	32,158	24,043	24,043	7,238	7,238	22,262	22,262
Adjusted $R^2$	0.016	0.016	0.034	0.035	0.051	0.144	0.019	0.049
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents regression results on firms' accounting conservatism over the sample period 1995-2010. All specifications are estimated using OLS regressions in first differences ( $\Delta$ ) based on estimation R2. Specification (1) to (4) estimate the effect of tax rate changes on firms' level of conditional conservatism ( $C-Score$ ) and long-run conditional conservatism ( $\beta$  yr.  $C-Score$ ). Specifications (5) to (8) estimate the effect of tax rate changes on firms' unconditional conservatism measured as  $Skewness$  and  $Con-Acc$ . All variable definitions are presented in Table 1. All specifications include country and industry-year fixed effects. Robust standard errors clustered at the firm level are given in parentheses. \*, \*\*, \*\*\* denote significance levels at the 10%, 5% and 1% level.

**Table 9:** Effect of corporate tax rate changes across high and low book-tax conformity countries

	High Book-Tax Conformity			Low Book-Tax Conformity		
	C-Score (1)	Skewness (2)	Con-Acc (3)	C-Score (4)	Skewness (5)	Con-Acc (6)
$\Delta CIT$	<b>8.758***</b> (1.514)	<b>-0.377</b> (4.783)	<b>0.002</b> (0.017)	<b>-1.381***</b> (0.443)	<b>3.818**</b> (1.860)	<b>0.009</b> (0.009)
$\Delta Size$	0.027 (0.041)	-1.168*** (0.206)	-0.000 (0.001)	0.025 (0.033)	-1.022*** (0.136)	-0.001* (0.001)
$\Delta Returns$	-0.077*** (0.020)	-0.454*** (0.075)	-0.000 (0.000)	0.011 (0.018)	-0.378*** (0.064)	0.000 (0.000)
$\Delta MTB$	-0.011 (0.015)	0.143** (0.064)	0.001*** (0.000)	0.015 (0.012)	0.080 (0.052)	0.002*** (0.000)
$\Delta Leverage$	0.047** (0.020)	0.116 (0.086)	-0.001*** (0.000)	0.042 (0.027)	0.111* (0.061)	-0.001* (0.000)
$\Delta Sales Growth$	0.009 (0.053)	-0.508*** (0.185)	-0.001 (0.001)	-0.031 (0.031)	-0.120 (0.131)	-0.001 (0.001)
$\Delta Op. cashflow$	-0.037 (0.087)	2.427*** (0.580)	0.017*** (0.001)	0.142* (0.074)	3.219*** (0.383)	0.017*** (0.001)
$\Delta R\&D expense$	0.700 (0.448)	1.806 (3.075)	-0.001 (0.006)	0.391* (0.210)	-0.069 (1.524)	0.003 (0.004)
$\Delta CEO shares$	-5.320 (5.983)	-11.621 (11.642)	-0.048* (0.029)	1.229 (1.987)	2.168 (7.597)	-0.054 (0.044)
Observations	16,896	2,571	11,163	15,262	4,667	11,099
Adjusted $R^2$	0.054	0.121	0.053	0.092	0.149	0.054
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

This table presents regression results on firms' accounting conservatism over the sample period 1995-2010. All specifications are estimated using OLS regressions based on estimation R2 using a sub-sample of high book-tax conformity and low book-tax conformity countries. High book-tax conformity is defined as observations above the median of *BTCRank*. Specification (1) to (4) estimate the effect of tax rate changes on firms' level of conservatism (*C-Score*, *Skewness*, *Con-Acc*) for firm-year observations in high book-tax conformity countries. Specification (5) to (8) estimate the effect of tax rate changes on firms' level of conservatism (*C-Score*, *Skewness*, *Con-Acc*) for firm-year observations in low book-tax conformity countries. All variable definitions are presented in Table 1. All specifications include country and industry-year fixed effects. Robust standard errors clustered at the firm level are given in parentheses. \*, \*\*, \*\*\* denote significance levels at the 10%, 5% and 1% level.

Table 10: Effect of major tax rate cuts on domestic firms' accounting conservatism

	Full Domestic Sample			High Book-Tax Conformity			Low Book-Tax Conformity		
	C-Score (1)	Skewness (2)	Con-Acc (3)	C-Score (4)	Skewness (5)	Con-Acc (6)	C-Score (7)	Skewness (8)	Con-Acc (9)
<i>Event</i>	<b>0.697***</b> <b>(0.205)</b>	<b>-0.326</b> <b>(0.852)</b>	<b>-0.002</b> <b>(0.004)</b>	<b>1.201***</b> <b>(0.409)</b>	<b>-0.122</b> <b>(1.203)</b>	<b>-0.012***</b> <b>(0.004)</b>	<b>-0.048</b> <b>(0.081)</b>	<b>-0.163</b> <b>(0.398)</b>	<b>-0.001</b> <b>(0.007)</b>
<i>Size</i>	-0.008* (0.005)	-0.117*** (0.038)	-0.000 (0.000)	-0.013** (0.006)	-0.212*** (0.062)	-0.000 (0.000)	-0.006 (0.006)	-0.069 (0.045)	-0.000 (0.000)
<i>Returns</i>	-0.035* (0.020)	-0.745*** (0.152)	-0.001 (0.001)	-0.107*** (0.025)	-0.710*** (0.230)	-0.000 (0.001)	0.062* (0.034)	-0.693*** (0.220)	-0.002* (0.001)
<i>MTB</i>	0.009* (0.005)	0.020 (0.050)	0.002*** (0.000)	0.017*** (0.006)	0.041 (0.068)	0.001*** (0.000)	-0.001 (0.006)	-0.014 (0.071)	0.003*** (0.000)
<i>Leverage</i>	-0.012 (0.011)	0.127*** (0.048)	-0.000 (0.000)	-0.026*** (0.009)	0.177** (0.085)	-0.001*** (0.000)	0.007 (0.018)	0.112 (0.071)	0.000 (0.000)
<i>Sales Growth</i>	-0.056 (0.046)	-0.201 (0.283)	0.004** (0.002)	-0.041 (0.063)	-0.669 (0.543)	0.001 (0.003)	-0.072* (0.042)	0.224 (0.305)	0.005** (0.002)
<i>Op. cashflow</i>	0.008 (0.068)	1.912*** (0.505)	0.023*** (0.003)	0.131 (0.080)	-0.578 (0.997)	0.026*** (0.003)	-0.125 (0.092)	2.811*** (0.646)	0.020*** (0.005)
<i>R&amp;D expense</i>	-0.084 (0.088)	-1.235 (1.334)	-0.024** (0.010)	-0.090 (0.091)	-3.415 (2.678)	-0.031*** (0.009)	0.068 (0.150)	0.682 (1.927)	-0.022 (0.019)
<i>CEO shares</i>	-0.168 (0.982)	-8.139* (4.642)	-0.017 (0.065)	-0.783 (2.128)	-29.465** (12.904)	-0.104 (0.113)	0.959 (0.885)	-2.105 (6.955)	0.016 (0.083)
Observations	8,607	2,018	5,805	5,546	855	3,517	3,061	1,163	2,288
Adjusted $R^2$	0.095	0.134	0.128	0.219	0.058	0.103	0.153	0.163	0.157
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents regression results on firms' accounting conservatism over the sample period 1995-2010 for domestic firms. All specifications are estimated using OLS regressions based on estimation R1 using a sub-sample of high book-tax conformity and low book-tax conformity countries. High book-tax conformity is defined as observations above the median of *BTCRank*. Specification (1) to (3) estimate the effect of major tax rate cuts ( $\geq 5$  percentage points) on firms' level of conservatism (*C-Score*, *Skewness*, *Con-Acc*) for the full sample of domestic firms. Specification (4) to (6) present results for the estimation in a sub-sample of domestic firms with high book-tax conformity. Specification (7) to (9) present results for the estimation in a sub-sample of domestic firms with low book-tax conformity. All variable definitions are presented in Table 1. All specifications include country and industry-year fixed effects. Robust standard errors clustered at the firm level are given in parentheses. \*, \*\*, \*\*\* denote significance levels at the 10%, 5% and 1% level.

Table 11: Effect of corporate tax rate changes on domestic firms' accounting conservatism

	Full Domestic Sample			High Book-Tax Conformity			Low Book-Tax Conformity		
	C-Score (1)	Skewness (2)	Con-Acc (3)	C-Score (4)	Skewness (5)	Con-Acc (6)	C-Score (7)	Skewness (8)	Con-Acc (9)
$\Delta CIT$	1.612 (0.983)	1.394 (7.011)	-0.009 (0.023)	6.413** (3.068)	-0.937 (10.530)	-0.169** (0.080)	-0.923 (1.510)	-0.721 (7.643)	0.025 (0.036)
$\Delta Size$	0.094** (0.045)	-1.123*** (0.272)	-0.002** (0.001)	0.112* (0.059)	-2.067*** (0.584)	-0.001 (0.001)	0.096 (0.060)	-0.832*** (0.306)	-0.003* (0.002)
$\Delta Returns$	-0.040* (0.023)	-0.453*** (0.137)	-0.000 (0.000)	-0.083*** (0.027)	-0.468** (0.195)	-0.001 (0.001)	0.020 (0.044)	-0.380** (0.187)	0.001 (0.001)
$\Delta MTB$	0.020 (0.014)	0.204* (0.106)	0.002*** (0.000)	0.001 (0.017)	0.515** (0.215)	0.002*** (0.000)	0.046** (0.020)	0.141 (0.144)	0.002*** (0.000)
$\Delta Leverage$	-0.001 (0.036)	0.201* (0.119)	-0.001** (0.000)	0.017 (0.032)	0.073 (0.173)	-0.001* (0.000)	-0.025 (0.041)	0.283 (0.183)	-0.001 (0.001)
$\Delta Sales Growth$	-0.007 (0.070)	-0.161 (0.261)	-0.001 (0.001)	0.034 (0.105)	-0.061 (0.382)	0.000 (0.002)	-0.074 (0.063)	-0.215 (0.333)	-0.001 (0.001)
$\Delta Op. cashflow$	0.055 (0.094)	4.064*** (0.741)	0.022*** (0.002)	0.126 (0.103)	3.516*** (1.024)	0.023*** (0.003)	0.109 (0.134)	4.543*** (0.972)	0.021*** (0.003)
$\Delta R\&D expense$	0.417* (0.249)	8.925 (5.471)	-0.008 (0.011)	0.159 (0.230)	-2.960 (12.553)	0.005 (0.011)	0.776** (0.382)	11.103* (6.131)	-0.025 (0.021)
$\Delta CEO shares$	-3.411 (5.654)	-26.487 (40.823)	-0.072 (0.102)	-1.181 (9.567)	-150.351*** (44.019)	-0.164 (0.166)	-1.336 (6.264)	25.735 (23.378)	-0.017 (0.130)
Observations	7,187	1,550	4,671	4,559	557	2,700	2,628	993	1,971
Adjusted $R^2$	0.056	0.124	0.082	0.186	0.114	0.077	0.152	0.128	0.095
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents regression results on firms' accounting conservatism over the sample period 1995-2010 for domestic firms. All specifications are estimated using OLS regressions based on estimation R1 using a sub-sample of high book-tax conformity and low book-tax conformity countries. High book-tax conformity is defined as observations above the median of *BTCRank*. Specification (1) to (3) estimate the effect of major tax rate cuts ( $\geq 5$  percentage points) on firms' level of conservatism (*C-Score*, *Skewness*, *Con-Acc*) for the full sample of domestic firms. Specification (4) to (6) present results for the estimation in a sub-sample of domestic firms with high book-tax conformity. Specification (7) to (9) present results for the estimation in a sub-sample of domestic firms with low book-tax conformity. All variable definitions are presented in Table 1. All specifications include country and industry-year fixed effects. Robust standard errors clustered at the firm level are given in parentheses. \*, \*\*, \*\*\* denote significance levels at the 10%, 5% and 1% level.

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