The implications of book-tax conformity and tax change for the earnings management of Portuguese micro firms

Cláudio Pais [a,*], Cláudia Afecto Dias [b]

[a] *Accounting Department, ISCTE-IUL, Avenida das Forças Armadas, 1649-026 Lisboa, Portugal*
[b] *Law Department, ISCAL, Avenida Miguel Bombarda, 20, 1069 - 035 Lisboa, Portugal*

A R T I C L E   I N F O

A B S T R A C T

Since 2014, Portugal has a special, optional tax regime for micro firms called the simplified tax regime, which is an alternative to the general tax regime. In the simplified tax regime, income tax is a percentage of specific revenues, which could be seen as an example of lower book-tax conformity. The general tax regime is an example of higher book-tax conformity because tax income is based on accounting income. Using the tax regimes as a proxy of book-tax conformity we study the influence of the different tax regimes on earnings management, as well as whether earnings management in the general tax regime is used to achieve taxable income and reporting goals. We find that firms opting for the simplified tax regime manage earnings less than firms in the general tax regime, and they manage earnings upwards while the latter manage earnings downwards. Furthermore, we conclude that accruals with high book-tax conformity are used to decrease taxable income and those with low conformity are used to increase accounting income. This leads us to conclude that lower book-tax conformity reduces earnings management. This single country case study contributes evidence on book-tax conformity issues.

1. Introduction

Since 2014, micro firms in Portugal have been able to choose to have their corporate income taxed according to a simplified tax regime or a general tax regime. In the Portuguese simplified tax regime, income tax is based on a percentage of specific revenues and in the general tax regime, income tax is based on accounting income, adjusted by non-taxable revenues and non-deductible expenses for tax purposes. However, most micro firms do not opt for the simplified tax regime, mainly because accountants advise against it due to the potential increase in income tax (Dâmaso, 2015).

Portugal is a code law country and in such countries the government interferes in accounting (Procházka & Molín, 2016). It is also seen as a country with high book-tax conformity and this is confirmed by using the general regime to tax firms (Blaylock et al., 2015; Marques et al., 2011; Watrin et al., 2014). Conversely, the simplified tax regime, as an alternative to the general tax regime, could be seen as an example of less book-tax conformity. Moreover, the simplified tax regime could be seen as a tax change. Hence, we analyze the influence of the corporate income tax regime adopted by micro Portuguese firms on earnings management and the direction of the earnings management in the two corporate income tax regimes. Furthermore, for firms in the general tax regime, we analyze which type of accruals is used to manage earnings.

---

* Corresponding author.
  E-mail addresses: claudio.pais@iscte-iul.pt (C. Pais), cmdias@iscal.ipl.pt (C.A. Dias).

We divide accruals in book-tax accruals and book-only accruals adopting the method of measurement proposed by Calegari (2000). We predict that earnings management is lower in micro firms that adopt the simplified tax regime, as book-tax conformity is relatively lower than in firms that adopt the general tax regime. We also predict that firms in the simplified tax regime manage earnings upward and those in the general tax regime manage earnings downwards, trying to achieve simultaneously tax and accounting income goals. Firms that adopt the general tax regime are also predicted to reduce book-tax accruals, in an attempt to reduce taxable income and additionally increase book-only accruals, which have relatively low book-tax conformity.

The results show that tax rules can affect accounting practices, as in the study by Calegari (2000). We find evidence that the tax regime influences the level of earnings management and income tax. Firms in the simplified tax regime manage earnings less than firms in the general tax regime, and do so downwards while the latter do so upwards. Moreover, and in the general tax regime, we also provide evidence that micro firms use accruals with high book-tax conformity to achieve tax-planning goals and accruals with lower book-tax conformity to achieve reporting objectives.

One contribution of this paper lies in studying the unconsolidated financial statements of micro private firms, which are the base to compute income tax. Private small and medium entities (SMEs) are the most important type of firms worldwide and are not studied as much as large or public firms. They represent more than 95 percent of firms worldwide and more than 60 percent of employment (International Federation of Accountants [IFAC], 2010), contributing significantly to employment creation, technology innovation and economic production, both in developed and developing countries (Chen, 2006). In Europe (Portugal), SMEs/micro correspond to 99.8%/93.0% (99.6%/88.1%) of non-financial firms, representing 66.6%/29.7% (71.8%/27.8%) of employment (European Commission [EC], 2019; Instituto Nacional de Estatística [INE], 2020). Another contribution lies in studying book-tax conformity and tax option in a single country, as most studies analyze the book-tax conformity issue more broadly across countries (Atwood et al., 2010; Blaylock et al., 2015; Leuz et al., 2003; Tang, 2015; Watrin et al., 2014). Another and more important contribution is our evidence that micro firms manage earnings more in a tax regime with higher tax conformity. These results may be useful to tax policy-makers.

The remainder of the paper is organized as follows. Section two gives a brief summary of the corporate income tax regimes for Portuguese firms. In section three we present a literature review and develop the hypotheses. The fourth section presents the methodology with the sample definition and research design. In the fifth section we discuss the results and the sixth section presents the conclusions.

2. Tax background

Currently in Portugal there are two tax regimes applied to micro firms, one being the general tax regime (applied to all firms) and the other the simplified tax regime. In the general tax regime, according to article 17 of the corporate income tax (CIT) code, taxable income is determined in accordance with financial accounting standards and adjusted by CIT code provisions. In the simplified tax regime, taxable income is determined in accordance with article 86B of the CIT code as a percentage of specific revenues. The conditions for opting for the simplified tax regime and the detailed determination of taxable income are presented in Table 1, and based on these conditions we present an example in Appendix.

The simplified tax regime for CIT and personal income tax (PIT) was introduced by Law no. 30-G/2000, of December 29 (state budget for 2001) for the period beginning in 2001. This regime was suspended by Law 64-A/2008, of December 31 (state budget for 2009) for the period beginning in 2009 because just a few firms chose this regime as it did not simplify their taxation or reduce their accounting burden, and it was mandatory to stay in the regime for a three-year period. In 2010 the simplified tax regime was revoked by Law no. 3-B/2010, of April 28 (state budget for 2010). The current simplified tax regime was introduced by Law no. 2/2014, of January 16, to begin in 2014, based on the proposals of the CIT reform commission and the main differences to the previous one are: (a) using a wider range of coefficients adapted to activities; (b) not being compulsory to remain in the regime; (c) being an optional regime; (d) the reduction of some coefficients; and (e) a reduction in taxable income for the first and second years after beginning the activity. The benefits of this regime could be a reduction in taxation, because it is no longer mandatory to pay the special payment on account, nor is it mandatory to pay some autonomous taxation.[1] However, two characteristics that were considered a constraint remained in the new simplified tax regime, specifically the requirement to have financial accounting and a minimum of taxable income (not being possible to carry forward tax losses). Thus, Law no. 10-A/2017, of 29 March, stipulated that the government would make a proposal to parliament to change the simplified tax regime to become effective on 1 January 2019, this deadline being postponed to the end of the first semester of 2019 (Law no. 71/2018, of 31 December).

Other countries have adopted simplified tax regimes based on a presumptive income (instead of a simplified taxation of taxable income) calculated on the basis of revenues (France, Mexico, and South Africa), because it could be on the basis of a single tax (for example, Argentina, Brazil, and Colombia) or physical variables (Mexico for some industries and Poland) (Dâmaso, 2015). In France, taxable income is based on sales revenues but reduced by amounts depending on the industry.

---

[1] The special payment on account was introduced in 1998 to combat tax evasion and tax fraud. It requires firms to pay income tax in advance based on sales revenue in the previous year. The requirements of this special payment on account were modified in 2003, increasing its minimum limit to € 1,250 and its maximum limit to € 200,000, and being deductible from the income tax of that year or the following four years. The part not yet deductible could be reimbursed if required, but this implied a tax audit.

Table 1
Simplified tax regime.

Main conditions to opt	Determination of taxable income
a. Residents firms that are not exempt and not subject to a special tax regime. b. Carry out mainly commercial, industrial, or agricultural activity. c. Do not exceed a total income of € 200,000 and assets of € 500,000. d. Do not have their accounts mandatorily audited. e. Adopt the accounting standard applicable to micro firms.	a. A coefficient applied to income as follows: i. 0.04 of the sales of goods and services rendered in catering, beverages and hotel activities. ii. 0.75 of the income from professional activities (article 151 of the Personal Income Taxes (PIT) code). iii. 0.10 of the remaining income from services rendered and operating subsidies and 0.30 of non-operating subsidies. iv. 0.95 or 1.00 to other income. b. The amount of taxable income should not be less than € 4,074 and € 4,242, respectively for 2014 and 2015.The 0.04 and 0.10 coefficients are reduced by 50% for the first period after beginning activity and by 25% in the following period.

In Mexico, taxable income is based on a percentage of revenue, depending on the industry. In South Africa, taxable income is based on increasing taxes on turnover.

3. Literature review and hypotheses development

Earnings management stems from the trade-off between relevance and reliability in financial reporting, meaning that highly reliable financial reports include only realised cash flows, while highly relevant reports are concerned with the current value of future cash flows (Sundvik, 2017b). According to Healy and Wahlen (1999), earnings management occurs when financial information is changed to influence either stakeholders' decisions or the outcomes of contracts that are based on accounting numbers. Earnings are formed by cash flows and accruals, and accruals are influenced by business operations and managerial decisions. Therefore, we use accruals.

The financial statements of private SMEs may be more influenced by taxation than those of public firms, and due to managers' ownership there is less agency conflict between shareholders and managers (which is the case in public firms), but potentially more agency conflict between owners and creditors and tax authorities (Langli & Svanström, 2014). Ball and Shivakumar (2005) say that one of the main objectives of private firms' financial statements is tax determination. Coppens and Peek (2005) indicate that tax incentives have a strong influence on financial statements in countries where accounting practice is strongly aligned with tax practice. Moreover, as private firms have less market pressure than public firms, they have lower non-tax costs with reporting lower earnings and could be more aggressive tax planners than public firms (Mills & Newberry, 2001).

3.1. Book-tax conformity and tax regimes

Portugal is a country with a high level of book-tax conformity (Blaylock et al., 2015; Marques et al., 2011; Watrin et al., 2014). Atwood et al. (2010) and Blaylock et al. (2015) analyze the relationship between book-tax conformity across countries and earnings quality (measured by earnings persistence and earnings management). More book-tax conformity could lead to limiting opportunistic management behavior, permitting the tax authorities to act as the auditor to monitor reported earnings, allowing shareholders to know the amount of taxes paid, making firms' performance more transparent (Atwood et al., 2010; Blaylock et al., 2015; Desai, 2005; Watrin et al., 2014).

However, it could be said that increased book-tax conformity allows tax policy-makers to interfere in the standard-setting process, reducing the quality of earnings (Atwood et al., 2010; Blaylock et al., 2015; Desai, 2005; Watrin et al., 2014). Accounting uses the accrual regime, in which revenues are recognized when earned and expenses when occurring. The tax rules are closer to cash basis accounting and demand more proof to recognize, for instance, impairment losses and provision expenses.

Atwood et al. (2010) find that persistence of earnings as well as the association between earnings and cash flows (proxies used to measure earnings quality) of firms in 33 countries decrease as book-tax conformity increases. Blaylock et al. (2015) find that firms in 34 countries with higher levels of book-tax conformity (as measured in Atwood et al. (2010)) have a higher level of earnings management when proxied by earnings smoothing, discretionary accruals, and small loss avoidance. Watrin et al. (2014) analyze whether consolidated statements in countries with one-book systems show more earnings management than consolidated statements in countries with two-book systems. Measuring tax-book conformity differently from Atwood et al. (2010) who use single/separate financial statements instead of consolidated financial statements, Watrin et al. (2014) find for 27 European countries that consolidated earnings are more managed in countries with one-book systems than in countries with two-book systems. However, and contrary to Blaylock et al. (2015), they find that book-tax conformity is related with more downward earnings management in consolidated financial statements.

Leuz et al. (2003), analyzing investor protection as a significant determinant of corporate earnings management across 31 countries, also analyze the influence of tax-book conformity on earnings management activity, and do not find any influence. Tang (2015) examines whether increased book-tax conformity reduces earnings management and tax avoidance in firms in

32 countries from 1995 to 2007 and finds evidence that high conformity is related to lower earnings management and tax avoidance. However, Tang (2015) uses consolidated financial statements, which is its main weakness because in the majority of code law system countries income tax is calculated based on separate financial statements.

Several studies have analyzed the consequences of tax reforms (Guenther, 1994; Guenther et al., 1997; Lin et al., 2014; Marques et al., 2011; Sundvik, 2016; Sundvik, 2017b), mainly when corporate income tax changes. If the tax rate is going to be reduced, income may be postponed from the higher tax rate period to the lower tax rate period (Sundvik, 2016).

Guenther (1994) analyzes whether listed United States (US) firms manage earnings, in response to change in the income tax rate of the US stated by the Tax Reform Act of 1986, from 46 percent to 34 percent. This was an incentive for firms to reduce accounting income. The results indicate that listed and large firms significantly reduce current accruals for the year previous to the tax rate reduction, providing evidence that earnings are managed.

In the US, before the Tax Reform Act of 1986, large, listed firms could use the cash method for tax purposes and the accrual method for accounting purposes, meaning a weak link between tax and book income. With the Tax Reform Act of 1986, large firms (those exceeding $5 million) had to use the accrual method for tax purposes, meaning increasing book-tax conformity. In this unique condition, Guenther et al. (1997) analyze whether these firms altered their reported accounting income and cash flow as a result of that tax change. The results show that increasing tax-book conformity causes firms to defer income.

Lin et al. (2014) study how managers of public and private firms make the trade-off between tax saving and non-tax costs in response to the reduction of the income tax rate in China from 33 to 25 percent. It was expected to find more income decreasing accruals in 2007 for private firms compared to public firms, and in 2007 compared to 2008. They find, as predicted, that private firms defer substantially more income from 2007 to 2008 than public firms.

Marques et al. (2011) study whether the amendment in 2003 on the special payment on account, increases firms' earnings management to reduce that payment. The findings are that private firms tend to minimize the special payment on account and, thus, reduce income tax payments.

Sundvik (2016) studies private Swedish firms' reaction to a reduction of the tax rate in 2009 and 2013 on earnings management using a decomposition approach, dividing accruals in certain types. The results show significant earnings management as a response to the reforms, specifically in accounts receivable accruals. Inventory and depreciation accruals were also used in the expected way, but to a lesser extent and no evidence of earnings management was found in accounts payable accruals. Sundvik (2017a) studies private firms in 12 countries where the tax rate changed for the period from 2007 to 2014. Total and discretionary accrual is used to measure earnings management, and book-tax conformity is measured by the Watrin et al. (2014) model. The results suggest that firms in higher book-tax conformity countries manage their earnings more in the two periods preceding the reduction of the tax rate than firms in lower book-tax conformity.

The general tax regime is an example of book-tax conformity, because tax income is based on accounting income, which is reinforced by Portugal's classification in the rank defined by Blaylock et al. (2015) and Watrin et al. (2014). Due to the tax income calculation of the simplified tax regime (based on a percentage of specific revenues), it can be said that this regime is not an example of book-tax conformity. Furthermore, the agency conflicts in private firms are known to be between owners and creditors and tax authorities, implicating more earnings management for tax purposes. On one hand, in the general tax regime, managers could have more incentives to manage earnings, mainly downward. On the other hand, the simplified tax regime could increase the incentive to manage earnings, specifically upward, as that does not increase tax income and it would be helpful in the case of needing debt finance. The issue in the general tax regime is that if earnings are managed upwards, that would increase tax income. Thus, the first and second hypotheses (H1 and H2) are:

H1. In the simplified tax regime firms adopt fewer earnings management practices than in the general tax regime.

H2. Firms in the general tax regime are more likely to manage earnings downwards while firms in the simplified tax regime are more likely to manage earnings upwards.

3.2. Firms in the general tax regime manage the different types of accruals differently

To maximize firm value, firms may have an incentive to reduce taxable income and, thus, reduce income tax (Cho et al., 2006). However, reducing book income may create financial reporting costs because, for example, firms with debt contracts may have incentives to increase book income to avoid breaching covenants (Dhaliwal, 1980).

We infer that firms in the general tax regime present higher earnings management and, thus, it is necessary to analyze which types of discretionary accruals are used in that connection. Calegari (2000) divided discretionary accruals into those that are highly correlated with tax requirements (book-tax accruals) and those that are not as correlated (book-only accruals). Hence, it is possible to study the effect of book-tax conformity on the use of accruals.

Studying the effect of changes in tax rates on 54 firms affected by tax law change, between 1986 and 1989 in the US, on debt ratios and accounting accruals, Calegari (2000) concludes that those firms adjust their discretionary accruals that have relatively high book-tax conformity to reduce their expected taxable income and use discretionary accruals with relatively low book-tax conformity to reach financial reporting objectives. However, considering different management of these different types of discretionary accruals, Guenther (1994) had already analyzed the impact of change in the corporate tax rate by

The Reform Act of 1986 in the US on those discretionary accruals. As predicted, the results show negative book-tax accruals for large firms for the year prior to the tax rate reduction.

Portuguese firms in the general tax regime are expected to engage in more earnings management practices and downwards. So, there is an expected use of book-tax accruals to reduce taxable income and book-only accruals to increase accounting income in order to create value for the firm and avoid issues in accounting-based contracts. Therefore, we state the third hypothesis (H3):

H3. Firms in the general tax regime reduce book-tax accruals to decrease taxable income and raise book-only accruals to achieve financial reporting objectives.

4. Methodology

4.1. Sample and data collection

We obtain data from Portuguese tax returns for corporate income (called *modelo 22*) and from simplified business information (called *informação empresarial simplificada*). To test the first hypothesis (H1) we use firms that have opted for the simplified tax regime for the period 2012 to 2015. We use 2014 and 2015 data to test the second hypothesis (H2) of firms that have opted for the simplified tax regime and those that could have adopted it but are in the general tax regime. To test the third hypothesis (H3), we use firms in the general tax regime for the period 2012 to 2015.

The sample selection process is as follows. The initial sample consists of 1,643,362 observations of firms that fulfil the conditions to opt for the simplified tax regime. There is withdrawal of 499,484 observations due to missing data for some years, 165,764 observations for not having submitted the simplified business information, 253,213 observations for presenting invalid information, 352,641 observations for inactive firms, 7,086 observations for a different tax period, and 2,206 observations for being parent firms. The final sample is composed of 362,968 observations (90,742 firms) and is presented in Table 2. From the samples used to test the hypotheses we exclude the outliers, those where the absolute value of total accruals is higher than the total of assets.

Considering the tax regime and a scale of revenues, our final sample is 37,656 observations from firms that choose the simplified tax regime and 325,312 observations from firms that choose the general tax regime, as shown in Table 3. Of the total observations, only 10.38% are from firms that choose the simplified tax regime and the majority of observations (81.13%) are of firms with revenues up to € 100,000. Of 37,656 observations from the simplified tax regime, 89.05% are from firms with revenues up to € 100,000.

4.2. Research design

4.2.1. Earnings management measure

As a measure of earnings management, we use the magnitude of absolute discretionary accruals calculated by the Jones (1991) cross-sectional model modified by Kothari et al. (2005). A large amount of discretionary accruals is indirect evidence of earnings management behavior (Francis & Yu, 2009). The absolute value of residuals from the following ordinary least-squares (OLS) regression as equation (1) is used to measure discretionary accruals:

$$TA_{jt}/A_{jt-1} = c + \beta_1(1/A_{jt-1}) + \beta_2 \Delta REV_{jt}/A_{jt-1} + \beta_3 PPE_{jt}/A_{jt-1} + \beta_4 ROA_{jt}/A_{jt-1} + \varepsilon_{jt} \tag{1}$$

where TA is total accruals; A is total assets; ΔREV is the change in revenues (revenue in period *t* less revenue in period *t-1*); PPE is the gross amount of property, plant, and equipment; and the ROA is the return on assets as the ratio of income before interest and taxes over total assets.

All the variables are lagged by total assets, intending to mitigate heteroskedasticity in residuals (White, 1980). As in Kothari et al. (2005), our model has a constant in the estimation providing an additional control for heteroskedasticity not alleviated by using assets as the deflator, mitigating problems stemming from an omitted size variable. The discretionary accruals are estimated separately for each industry.

Total accruals are calculated using balance sheet accrual estimates and not by the difference between net income and cash flow operations, which leads to more errors, as stated by Hribar and Collins (2002). However, it is not possible to compute the total accruals by the difference between net income and cash flow from operations because the firms in the sample do not need to present a cash flow statement. From the balance sheet, the estimates of total accruals (TA) equal the change in non-cash current assets ((ΔCA minus ΔCASH), minus the change in current liabilities (excluding current debt (ΔCL minus ΔCDEBT)) and minus depreciation (DEP) as shown below:

$$TA = (DCA - DCASH) - (DCL - DCDEBT) - DEP \tag{2}$$

Book-tax accruals (BTA) are the difference between total accruals (TA) and book-only accruals (BOA), calculated as follows:

$$BTA = TA - BOA \tag{3}$$

Table 2

Sample selection process.

	Observations	%
Initial sample	1,643,362	100.00
Observations withdrawn:		
No data available	−499,484	−30.39
No submission of simplified business information	−165,764	−10.09
Invalid information	−253,213	−15.41
Inactive firms	−352,641	−21.46
Tax period different from the civil period	−7,086	−0.43
Parent firms	−2,206	−0.13
Final sample	362,968	22.09

Table 3

Observations by tax regime and amount of revenues in Euros.

	Tax regime				Total	
	Simplified		General			
Revenues	N	%	N	%		%
0 to 50,000	23,479	6.47	152,532	42.02	176,011	48.49
50,000 to 100,000	10,055	2.77	108,415	29.87	118,470	32.64
100,000 to 150,000	3,294	0.91	49,986	13.77	53,280	14.68
150,000 to 200,000	828	0.23	14,379	3.96	15,207	4.19
Total	37,656	10.38	325,312	89.62	362,968	100.00

Book-only accruals are calculated as follows:

$$BOA = \Delta TAXREC - \Delta TAXPAY - ALLOW \tag{4}$$

where $\Delta TAXREC$ is the change in income tax receivable; $\Delta TAXPAY$ is the change in income tax payable; and ALLOW is the allowance for bad debts and inventory. We use the Calegari (2000) method to measure book-tax accruals and book-only accruals, slightly changed to incorporate the specificities of the Portuguese setting.

$\Delta TAXREC$ and $\Delta TAXPAY$ are eliminated because expense tax is not deductible and income tax is not taxable, both for tax purposes. ALLOW is removed as well, because this expense is only deductible when it meets some tax requirements and, thus, the income is not taxable. As depreciation and amortization expense in Portugal is computed using the tax rules, we include it in the book-tax accruals. This is contrary to the Calegari (2000) measurement because he studies US firms.

Using the same model used to calculate the discretionary accruals of total accruals, the Jones (1991) cross-sectional model modified by Kothari et al. (2005), the discretionary book-tax accruals (DBTA), and the discretionary book-only accruals (DBTO) are the residuals of the following equations (5 and 6):[2]

$$BTA_{jt}/A_{jt-1} = c + \beta_1(1/A_{jt-1}) + \beta_2\Delta REV_{jt}/A_{jt-1} + \beta_3 PPE_{jt}/A_{jt-1} + \beta_4 ROA_{jt}/A_{jt-1} + \varepsilon_{jt} \tag{5}$$

$$BOA_{jt}/A_{jt-1} = c + \beta_1(1/A_{jt-1}) + \beta_2\Delta REV_{jt}/A_{jt-1} + \beta_3 ROA_{jt}/A_{jt-1} + \varepsilon_{jt} \tag{6}$$

4.2.2. Tax regime option and earnings management practices

To test the first hypothesis (H1) we estimate the following OLS regression as Eq. (7), in which the dependent variable is the absolute value of discretionary accruals, the variable of interest is a dummy variable of a period before and after adoption of the simplified tax regime and other variables are control variables:

$$|DA|_{jt} = \alpha_0 + \alpha_1 POST_{jt} + \Sigma\alpha_i CONTROLS + \Sigma FE + \varepsilon_{jt} \tag{7}$$

The absolute value of discretionary accruals ($|DA|$) is calculated by the Jones (1991) model modified by Kothari et al. (2005). The variable of interest is POST, a dummy variable that takes the value of 1 for periods after adoption of the simplified tax regime (2014 and 2015) and 0 otherwise, and the coefficient is expected to be negative, meaning that these firms engage in less earnings management.

The other variables are control variables. The tax burden (TAXBUR) is the ratio of tax expense to profit before interest and tax, and is a proxy for the effective tax rate used for corporate tax burden (Gupta & Newberry, 1997; Porcano, 1986; Shevlin & Porter, 1992). TAXBUR is used because Katz and Ott (2006) found evidence that paying less tax influences the choice between the general and simplified tax regimes. We include size (SIZE), the natural logarithm of total assets, to control for the firm size effect on accruals quality (Dechow & Dichev, 2002). This is because large firms may try to engage in less earnings man-

---

[2] PPE is not included in the BOA, because book-only accruals do not include DEP.

agement to reduce political pressure (Watts & Zimmerman, 1986). A negative coefficient is expected. Leverage (LEV), the ratio of total debt to total assets, is included as it works as an incentive to increase earnings management (Watts & Zimmerman, 1986). The proposed sign of the leverage coefficient is positive.

The change in sales (CHSALES) and return on assets (ROA) are included to control for differences in performance (Dechow et al., 1995; Young, 1999). CHSALES is the change in net sales deflated by net sales. A positive association is expected between earnings management and change in sales because growth firms are engaged in more earnings management (Skinner & Sloan, 2002). Return on assets (ROA) is the ratio of income before interests and taxes over total assets. We expect a negative coefficient in the ROA variable (Dechow et al., 1995).

Other revenues (OTHR) is other income besides sales and services rendered, and are included here for the first time as the coefficients applied to other revenues in the simplified tax regime are different and higher than the ones applied to sales and services rendered. We expect a positive coefficient as the result of an attempt to reduce the other revenues and, consequently, the tax income.

Losses (LOSS) is a dummy variable equal to one if net income is negative and zero otherwise.[3] It is included to control for potential differences in earnings management between unprofitable and profit firms (Choi et al., 2019). Finally, we include industry dummies (IND), a state location dummy (STATE), and years dummy (YEAR) to control for industry, state location, and years' fixed effects.

This regression is applied only to firms that opt into the simplified tax regime in 2014 and 2015, and from 2012 to 2015. All variables are summarized in Table 4.

4.2.3. Tax regime option and sign of earnings management

To test the second hypothesis (H2) we estimate the following OLS regression as equation (8), in which the dependent variable is still the absolute value of discretionary accruals (|DA|), but the variables of interest are now a dummy variable of the tax regime adopted, a dummy variable of the sign of the discretionary accruals and the interaction between these two variables, and includes the control variables as in Eq. (7):

$$|DA|_{jt} = \alpha_0 + \alpha_1 TAXR_{jt} + \alpha_2 SIGNDA_{jt} + \alpha_3 TAXR \times SIGNDA_{jt} + \Sigma\alpha_i CONTROLS_{jt} + \Sigma FE + \varepsilon_{jt} \qquad (8)$$

where TAXR is the tax regime, a dummy variable that takes the value of 1 if the tax regime adopted is the simplified tax regime and 0 if the general tax regime is adopted; SIGNDA, the sign of the discretionary accruals, is a dummy variable that takes the value of 1 if the discretionary accruals are positive and 0 otherwise; and TAXR × SIGNDA is the interaction between the tax regime variable and the sign of the discretionary variable.

The coefficient of the TAXR variable gives the influence of the simplified tax regime on the absolute value of discretionary accruals when the sign of discretionary accruals is negative (SIGNDA). The coefficient of the SIGNDA variable gives the influence of the general tax regime (TAXR) on the absolute value of discretionary accruals when the sign of discretionary accruals is positive (SIGNDA). The coefficient of the TAXR × SIGNDA variable gives the influence of the simplified tax regime on the absolute value of discretionary accruals when the sign of discretionary accruals is positive (SIGNDA). We expect a negative coefficient in the TAXR variable, meaning that firms in the simplified tax regime manage earnings downwards when discretionary accruals are negative and upwards when discretionary accruals are positive. We also expect a negative coefficient in the SIGNDA variable, meaning that firms in the general tax regime manage earnings downwards when discretionary accruals are positive. However, we expect a positive coefficient in the TAXR × SIGNDA variable, meaning that firms in the simplified tax regime manage earnings upwards.

This regression is applied to a sample that comprises all the firms that could opt for the simplified tax regime in 2014 and 2015. The control variables and fixed effects are the same as in Eq. (7). These variables are summarized in Table 4.

4.2.4. General tax regime and types of accruals

To test the third hypothesis (H3) we estimate the following OLS regression as Eq. (9), in which the dependent variable is discretionary book-only accruals (DBOA) and the variable of interest is discretionary book-tax accruals (DBTA), and the other variables are control variables as in the previous Eqs. (7) and (8):

$$DBOA_{jt} = \alpha_0 + \alpha_1 DBTA_{jt} + \sum \alpha_i CONTROLS + \sum FE + \varepsilon_{jt} \qquad (9)$$

We expect the DBTA sign to be negative, meaning that entities tend to decrease taxable income to avoid tax payment. The control variables and the fixed effects are the ones mentioned for the Eq. (7), except OTHR, which is not used in Eq. (9). These variables are summarized in Table 4. The sample to test H3 only firms in the general tax regime that could opt for the simplified tax regime and for the periods from 2012 to 2015.

---

[3] Höglund and Sundvik (2019) find for small private firms and when corporate tax falls, that auditing constrains earnings management. In Portugal, within micro firms, only those that are public limited companies must have their financial statements audited, and these are very few.

Table 4
Measurement of variables.

Panel A: Dependent variables		
Variable name	Variable label	Measurement
|DA|	*Discretionary accruals*	Absolute value of discretionary accruals measured by the modified Jones (1991) model (Kothari et al., 2005).
DBOA	*Discretionary book-only accruals*	Discretionary book-only accruals measured by the modified Jones (1991) model (Kothari et al., 2005).

Panel B: Independent variables			
Variable name	Variable label	Measurement	Expected sign
POST	*Post*	Variable that takes the value of 1 after adopting the simplified tax regime and 0 otherwise.	−
TAXR	*Tax regime*	Variable that takes the value of 1 if the tax regime adopted is the simplified tax regime and 0 if the tax regime adopted is the general tax regime.	−
SIGNDA	*Sign of discretionary accruals*	Variable that takes the value of 1 if the sign of discretionary accruals is positive and 0 otherwise.	−
TAXR×SIGNDA	*Interaction between TAXR and SIGNDA*	Interaction between the tax regime variable and the sign of discretionary accruals variable.	+
DBTA	*Discretionary book-tax accruals*	Discretionary book-tax accruals measured by the modified Jones (1991) model (Kothari et al., 2005).	−
TAXBUR	*Tax burden*	Proxy for effective tax rate is the ratio between tax expense and profit before interest and tax.	+
SIZE	*Size*	Natural logarithm of total assets.	−
LEV	*Leverage*	Ratio of total debt to total assets.	+
CHSALES	*Change in sales*	Ratio of change in sales and sales of the previous period.	+
ROA	*Return on assets*	Ratio between income before interest and taxes over total assets.	−
OTHR	*Other revenues*	Other income besides sales and services rendered.	+
LOSS	*Losses*	Variable that takes the value of 1 for negative net income and 0 otherwise.	+
IND, STATE, and YEAR	*Industry, state location, and year dummies*	Dummy variables to control for industry, state location, and years' fixed effects, respectively.	

5. Results

Panel A of Table 5 presents the descriptive statistics to test the tax regime and earnings management practices (H1). The sample is composed of firms that opt for the simplified tax regime and the periods from 2012 to 2015. We want to test whether these firms show less earnings management in the simplified tax regime (post-opt, 2014, and 2015) than in the general tax regime (pre-opt, 2012, and 2013). The parametric *t*-test of difference in means across pre-opt and post-opt rejects the null hypothesis of no difference at the 10% level (excluding the TAXBUR and ROA variables). It is supposed that the mean of discretionary accruals (DA) is lower in the post-opt period than in the pre-opt period, which is the case of the DA variable (0.061 and 0.075, respectively), meaning that despite management upwards, firms manage less, confirming expectations. However, when it comes to the absolute value of discretionary accruals (\|DA\|) the results are not so straightforward. The mean post-opt (0.290) is higher than in pre-opt (0.279), meaning that firms could manage more upwards but not downwards because the variable is in absolute values. Firms opting for the simplified tax regime tend to be smaller (SIZE), riskier (LEV), with increasing sales (CHSALES), more profitable (ROA), with less other revenues (OTHR) and the same frequency of negative income (LOSS).

In Panel B of Table 5, we present the descriptive statistics to test the tax regime option and the sign of earnings management (H2), with firms in the general tax regime being more likely to manage earnings downwards while firms in the simplified tax regime are more likely to manage earnings upwards. To test this hypothesis the sample includes all the firms that could opt for the simplified tax regime in 2014 and 2015. We perform a parametric *t*-test of difference in means for all variables between the general tax regime and simplified tax regime and we reject the null hypothesis of no difference at least at the 10% level (except for \|DA\|, LEV, CHSALES, and OTHR variables). We find that the mean of discretionary accruals (0.061) is higher for firms in the simplified tax regime than for those in the general tax regime (0.036), confirming our hypothesis that firms in the simplified regime are more likely to manage earnings upwards and firms in the general tax regime do the opposite. We cannot confirm that firms in the general tax regime manage earnings more than those in the simplified tax regime (the *t*-test for the mean of absolute value of discretionary accruals (\|DA\|) is not statistically significant). Firms in the general tax regime compared to those in the simplified tax regime are larger (SIZE), more profitable (ROA), and less likely to have negative income (LOSS).

Panel C of Table 5 presents the descriptive statistics to test the general tax regime and types of accruals (H3), the sample being composed of firms that opt for the general tax regime from 2012 to 2015. We want to find evidence that these firms use book-tax accruals (BTA) to reduce taxable income and book-only accruals (BOA) to increase accounting income. We perform the *t*-test of difference in means across positive and negative discretionary book-only accruals (DBOA) and we reject the null hypothesis of no difference at the 1% level (except for CHSALES variable). As predicted, firms manage earnings using both

Table 5
Descriptive statistics (H1, H2 and H3).

Panel A: Tax option regime and earnings management practices (H1)

	Pre opt (N = 17,751)			Post opt (N = 17,233)				Pre and post opt (N = 34,984)		
Variables	Mean	Median	Standard deviation	Mean	Median	Standard deviation	t-test	Mean	Median	Standard Deviation
Dependent variable										
|DA|	0.279	0.177	0.379	0.290	0.181	0.424	−1.806*	0.284	0.179	0.402
DA	0.075	0.085	0.464	0.061	0.067	0.511	2.188**	0.068	0.076	0.488
Control variables										
TAXBUR	0.694	0.000	65.475	0.238	0.000	12.884	0.835	0.469	0.000	47.508
SIZE	4.682	4.670	0.416	4.673	4.668	0.432	2.546**	4.678	4.669	0.424
LEV	0.978	0.648	2.112	1.199	0.621	2.636	−8.861***	1.087	0.636	2.387
CHSALES	0.016	−0.064	1.141	0.101	0.000	1.588	−5.487***	0.058	−0.029	1.380
ROA	−0.088	0.006	0.487	−0.082	0.011	0.499	−0.465	−0.085	0.008	0.493
OTHR	0.034	0.001	0.138	0.030	0.000	0.191	2.812***	0.032	0.001	0.166
LOSS	0.470	0.000	0.499	0.466	0.000	0.499	−0.240	0.468	0.000	0.499

Panel B: Tax regime option and sign of earnings management (H2)

	General tax regime (N=151,743)			Simplified tax regime (N=17,233)				Total (N=168,976)		
Variables	Mean	Median	Standard Deviation	Mean	Median	Standard deviation	t-test	Mean	Median	Standard deviation
Dependent variable										
|DA|	0.308	0.178	1.534	0.290	0.181	0.424	1.482	0.306	0.178	1.460
DA	0.036	0.078	1.564	0.061	0.067	0.511	−2.052**	0.039	0.077	1.491
Interest variables										
TAXR	0.000	0.000	0.000	1.000	1.000	0.000	...	0.102	0.000	0.303
SIGNDA	0.642	1.000	0.479	0.618	1.000	0.486	6.271***	0.640	1.000	0.303
Control variables										
TAXBUR	0.154	0.064	4.171	0.238	0.000	12.884	−1.847*	0.162	0.060	5.706
SIZE	4.796	4.823	0.421	4.673	4.668	0.432	36.107***	4.784	4.808	0.423
LEV	1.166	0.643	8.422	1.199	0.621	2.636	−0.514	1.619	0.641	8.025
CHSALES	114.591	0.006	26482.670	0.101	0.000	1.588	0.567	102.915	0.005	25095.96
ROA	−0.037	0.022	0.754	−0.082	0.011	0.499	7.728***	−0.041	0.021	0.732
OTHR	0.061	0.000	6.610	0.030	0.000	0.191	0.607	0.058	0.001	6.265
LOSS	0.377	0.000	0.485	0.466	0.000	0.499	−22.686***	0.386	0.000	0.487

Panel C: General tax regime and types of accruals (H3)

	Positive DBOA (N=200,412)			Negative DBOA (N=72,473)				Positive and negative DBOA (N=272,885)		
Variables	Mean	Median	Standard deviation	Mean	Median	Standard deviation	t-test	Mean	Median	Standard Deviation
Dependent variable										
DBOA	0.010	0.008	0.010	−0.027	−0.016	0.035	−475.931***	−0.000	0.006	0.026
Variables of interest										
DBTA	−0.021	−0.014	0.266	−0.009	−0.011	0.297	9.595***	−0.018	−0.014	0.275
Control variables										
TAXBUR	0.187	0.010	8.000	0.203	0.215	21.257	2.021**	0.191	0.066	12.921
SIZE	4.823	4.846	0.396	4.819	4.834	0.356	−37.657***	4.822	4.843	0.386
LEV	0.978	0.710	1.679	0.863	0.515	1.516	−3.846***	0.947	0.656	1.489
CHSALES	0.142	−0.020	10.595	0.096	−0.022	7.097	−0.614	0.130	−0.021	9.788
ROA	−0.045	0.010	0.268	−0.005	0.076	0.397	−4.561***	−0.034	0.017	0.308
LOSS	0.425	0.000	0.494	0.305	0.000	0.460	−81.742***	0.393	0.000	0.488

Notes: Panel A includes descriptive statistics for the tax option regime and earnings management practices (H1) model. Panels B show descriptive statistics for the tax regime option and sign of earnings management (H2) model. Panels C show descriptive statistics for general tax regime and types of accruals (H3) model. All variables defined in Table 4. ***, **, and * indicate statistical significance from two-tailed tests at 0.01, 0.05, and 0.1, respectively.

DBOA and DBTA in opposite directions and the number of positive observations of DBOA (200,412) is greater than negative ones (72,473). Firms with positive DBOA are slightly larger (SIZE), less risky (LEV), increase more (CHSALES), less profitable (ROA), and are more likely to have negative income than those with negative DBOA.

Panel A of Table 6 shows the Pearson (for quantitative variables) and Spearman (for qualitative variables) correlations for the tax option regime and earnings management practices (H1). The sign of the correlation between absolute discretionary accruals (\|DA\|) and the POST variable is positive but very weak, meaning that after simplified tax regime adoption, earnings management is higher, not confirming our hypothesis. All the other signs between the dependent variable and independent variables are as expected (except for LOSS) and all the correlations are statistically significant (except for TAXBUR and \|DA\|,

Table 6

Pearson (quantitative variables) and Spearman (qualitative variables) correlations (H1, H2, and H3).

Panel A: Tax option regime and earnings management practices (H1)

Variables	|DA|	POST	TAXBUR	SIZE	LEV	CHSALES	ROA	OTHR	LOSS
|DA|	1								
POST	0.010*	1							
TAXBUR	0.001	−0.189***	1						
SIZE	−0.231***	−0.010*	−0.012***	1					
LEV	0.134***	0.002	−0.002	−0.271***	1				
CHSALES	0.065***	0.147***	0.001	0.018***	−0.000	1			
ROA	−0.070***	−0.039***	0.002	0.270***	−0.590***	0.041***	1		
OTHR	0.054***	−0.057***	−0.001	−0.088***	0.087***	−0.012**	0.040***	1	
LOSS	−0.092***	−0.001	−0.821***	−0.142***	0.462***	−0.217***	−0.861***	−0.057***	1

Panel B: Tax regime option and sign of earnings management (H2)

Variables	|DA|	TAXR	SIGNDA	TAXBUR	SIZE	LEV	CHSALES	ROA	OTHR	LOSS
|DA|	1									
TAXR	−0.004	1								
SIGNDA	−0.033***	−0.015***	1							
TAXBUR	0.000	−0.110***	0.139***	1						
SIZE	−0.092***	−0.090***	0.272***	0.001	1					
LEV	0.098***	−0.014***	−0.214***	−0.001	−0.139***	1				
CHSALES	−0.001	−0.009***	−0.224**	−0.000	0.003	−0.000	1			
ROA	−0.070***	−0.031***	0.142***	0.005**	0.180***	−0.451***	0.001	1		
OTHR	0.053***	−0.036***	0.031***	−0.000	−0.027***	0.532***	−0.000	0.000	1	
LOSS	−0.038***	0.055***	−0.167***	−0.796***	−0.170***	0.409***	−0.211***	−0.837***	−0.069***	1

Panel C: General tax regime and types of accruals (H3)

Variables	DBOA	DBTA	TAXBUR	SIZE	LEV	CHSALES	ROA	LOSS
DBOA	1							
DBTA	−0.036***	1						
TAXBUR	−0.003	−0.002	1					
SIZE	0.024***	0.107***	0.002	1				
LEV	0.003*	−0.058***	−0.003	−0.279***	1			
CHSALES	−0.002	0.005**	0.000	0.003*	−0.000	1		
ROA	−0.038**	0.006***	0.005***	0.249***	−0.444***	0.010***	1	
LOSS	0.047***	−0.081***	−0.802***	−0.141***	0.394***	−0.238***	−0.834***	1

Notes: Panel A is the correlation matrix for the tax option regime and earnings management practices (H1) model (H1), Panel B for the tax option regime and earnings management practices (H2) model and Panels C for general tax regime and types of accruals (H3) model. The correlations with POST, TAXR, SIGNDA, and LOSS variables are Spearman correlations. All variables defined in Table 4. ***, **, and * indicate statistical significance from two-tailed tests at 0.01, 0.05, and 0.1, respectively.

LEV and POST and TAXBUR, CHSALES, TAXBUR and LEV, ROA and TAXBUR, OTHR and TAXBUR, and LOSS and POST). We use this correlation matrix to examine whether multicollinearity is a potential issue. As all correlations are below 0.80 (except for the independent variables of LOSS and TAXBUR, and LOSS and ROA), we can conclude that multicollinearity is not an issue. To confirm that collinearity does not affect our results, we perform a multicollinearity test and find that all variance inflation factors (VIF) are below the standard acceptable level of three (Judge et al., 1988).

For the tax regime option and the sign of earnings management (H2), the signs of the correlations between the independent variables and the dependent variable (|DA|) are as expected (except for CHSALES and LOSS) (Panel B of Table 6). Almost all the correlations are statistically significant. All the coefficients are below 0.8 (except for LOSS and ROA) and the VIF are below the level of three, so we conclude that multicollinearity is not an issue (Judge et al., 1988).

In Panel C of Table 6 and for the general tax regime and types of accruals we show the correlation coefficients. Almost all the correlations are statistically significant at 10% level and the sign of the DBTA, the variable of interest, has the expected sign. All the coefficients are below 0.80 (except for LOSS and TAXBUR and ROA), thus, we compute the VIF and all of them are below the level of three (Judge et al., 1988).

Table 7 presents the main results of the OLS regressions concerning the influence of the tax regime followed on earnings management, the influence of the tax regime option on the sign of earnings management and how firms in the general tax regime manage book-tax accruals and book-only accruals to decrease taxable income and increase accounting income, respectively.[4]

As for the influence of the tax regime on earnings management, the absolute value of discretionary accruals is explained by 10% by the model and the model is statistically significant (first column of Table 7). The results show that firms that opt for the simplified tax regime in the years of the adoption, 2014 and 2015, have fewer earnings management practices. This

---

[4] For all the regressions we use a robust test in the presence of heteroskedasticity, when the White test is significant at, at least, 10 percent. We also run the regression clustering the standard errors by firm and the *t*-statistics are very similar to the ones presented.

Table 7
Regression results.

Variables	Prediction	Tax option regime and earnings management practices	Tax regime option and sign of earnings management			General tax regime and types of accruals
			Pooled	Simplified tax regime	General tax regime	
Intercept		1.092 (23.315)***	1.592 (13.216)***	1.272 (19.431)***	1.660 (13.050)***	−0.013 (−16.707)***
POST	−	−0.014 (-2.818)***				
TAXR	−		−0.086 (-7.474)***			
SIGNDA	−		−0.055 (-5,179)***	0.018 (2.414)**	−0.052 (-4.855)***	
TAXR × SIGNDA	+		0.069 (6.010)***			
DBTA	−					−0.004 (-14.353)***
TB	+	−0.000 (2.130)**	−0.000 (-1.024)	0.000 (0.861)	−0.001 (-1.515)	−0.000 (-0.160)
SIZE	−	−0.160 (-16.914)***	−0.249 (-10.278)***	−0.212 (-14.705)***	−0.264 (-10.308)***	0.003 (17.235)***
LEV	+	0.019 (5.962)***	0.012 (1.118)	0.012 (3.555)***	0.011 (1.084)	−0.000 (-5.560)***
CHSALES	+	0.019 (2.615)***	−0.000 (-15.789)***	0.016 (1.762)*	−0.000 (-14.653)***	0.000 (2.613)***
ROA	−	−0.014 (-0.605)	−0.077 (-1.191)	0.016 (0.471)	−0.081 (-1.185)	−0.000 (1.373)
OTHR	+	0.083 (3.231)***	0.004 (0.568)	0.049 (1.956)**	0.004 (0.578)	
LOSS	+	−0.044 (-5.299)***	−0.071 (-2.911)***	−0.074 (-5.126)***	−0.072 (/2.817)***	0.005 (50.174)***
IND fixed effects		Included	Included	Included	Included	Included
STATE fixed eff.		Included	Included	Not included	Included	Included
YEAR fixed eff.		Included	Included	Included	Included	Included
N (observations)		34,984	168,976	17,233	151,743	272,885
Adjusted R²		0.098	0.021	0.063	0.021	0.013
F-value		225.158***	213.893***	98.319***	229.322***	237.000***

Notes: This table shows the coefficients and *t*-statistics for the tax option regime and earnings management practices (H1), tax regime option and sign of earnings management (H2) and general regime and types of accruals (H3). All variables defined in Table 4. ***, **, and * indicate statistical significance from two-tailed tests at 0.01, 0.05, and 0.1, respectively.

confirms our first hypothesis, as the coefficient of the POST variable is negative and statistically significant at a 1% level. This leads us to conclude that when book-tax conformity is higher, earnings management practices are also higher. All the other variables, which are control variables, are statistically significant at least at 5% (except for ROA) and have the expected sign, except tax burden (TAXBUR) and LOSS, which have the opposite sign from that predicted.

Analyzing the results of the pooled regression for the relation between tax regimes and sign of earnings management (second column of Table7), we conclude that firms opting for the simplified tax regime reduce discretionary accruals when they are negative, since the coefficient of the TAXR variable is negative and statistically significant at a 1% level. Moreover, we conclude that when firms opt for the general tax regime, discretionary accruals reduce when their sign is positive, and so the SIGNDA coefficient is negative and statistically significant at a 1% level. The interaction of the tax regime variable (TAXR) when firms opt for the simplified tax regime and the sign of discretionary accruals (SIGNDA) is positive (and statistically significant), meaning that those firms increase discretionary accruals when they are positive. The control variables SIZE, CHSALES, and LOSS are statistically significant at a 1% level, but CHSALES and LOSS do not have the predicted sign. These results allow us to conclude that firms opting for the simplified tax regime manage earnings upwards and those opting for the general tax regime manage earnings downwards.

In order to mitigate the effect of any cross-sectional correlation in the regression error terms, we also estimate the regression separately for each type of tax regime adopted (simplified tax regime and general tax regime). The coefficients for these estimations are presented in the third and fourth column of Table 7 along with the related *t*-statistics. The results are consistent with the pooled estimation. In particular, the SIGNDA coefficient is statistically significant and positive in the case of the simplified tax regime and negative in the case of the general tax regime. This allows us to conclude that firms opting for the simplified tax regime manage earnings upwards while firms opting for the general tax regime manage earnings downwards.

As to how firms in the general tax regime manage book-tax accruals and book-only accruals to decrease taxable income and increase accounting income, respectively, the variable of interest is discretionary book-tax accruals (DBTA) and its coefficient is negative (0.004) and statistically significant at 1% level (fifth column of Table 7), meaning that when discretionary book-only accruals (DBOA) increase, DBTA decreases, which confirms our hypothesis. Thus, we conclude that firms use discretionary accruals that are highly correlated with tax requirements (DBTA) to reduce taxable income, and to achieve reporting goals, use discretionary accruals (DBOA) that are not as correlated to increase accounting income.

6. Conclusions

Portugal is an example of a country with high book-tax conformity. Keeping this in mind we analyze the influence of switching from a general tax regime (an example of high tax conformity) to a simplified tax regime (which could be seen as an example of less book-tax conformity), which is a peculiarity of Portuguese taxation. We also analyze which type of accruals are used by firms in the general tax regime to manage tax and accounting income. Our predictions are that firms

which opt to be taxed according to the simplified tax regime, instead of the general tax regime, manage earnings less and by doing so they tend to increase accounting income (as they are not taxed on the basis of taxable income) more than firms in the general tax regime. Moreover, we estimate that firms in the general tax regime use accruals that are more highly correlated to tax requirements (book-tax accruals) to increase taxable income and use those that are less correlated (book-only accruals) to increase accounting income. As predicted, we find evidence that firms in the simplified regime manage earnings less than those in the general tax regime, and in doing so, the former manage earnings upwards and the latter manage earnings downwards. Firms in the general regime, albeit managing earnings downwards, manage accruals differently, reducing book-tax accruals to reduce taxable income, as at the same time, they increase book-only accruals to achieve reporting objectives. All our conclusions are in the same direction, due to evidence that increased the tax conformity leads to increased earnings management. These findings are important because they highlight that tax conformity should not be increased and, thus, are very interesting for government and tax authorities in defining tax policies.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

Appendix A. Example of computing taxable income

A restaurant has for the period 2015 revenues of 160,000 and expenses of 144,000. For the general tax regime, it is assumed that are no differences between accounting income and taxable income. The tax income is 17% for taxable income up to 15,000 and 21% for the surplus. The municipality surtax is 1.5%.

Computation of taxable income and income tax

General tax regime

a. The taxable income is 16,000 (160,000–144,000).
b. The income tax is 3,000 (15,000 × 0.17 + 1,000 × 0.21 + 16,000 × 0.015).

Simplified tax regime

a. The taxable income for this firm that renders services is based on a coefficient of 0.04 and is in this case 3,200 ((0.04 × 0.50) × 160,000) if it is the first year of activity, 4,800 ((0.04 × 0.75) × 160,000) if it is the second year of activity and 6,400 (0.04 × 160,000) (higher than the minimum of 4,242), for the next years.
b. The income tax is 592 (3,200 × 0.17 + 3,200 × 0.015), 888 (4,800 × 0.17 + 4,800 × 0.015) and 1,184 (6,400 × 0.17 + 6,400 × 0.015), respectively for the first, second and next years.

References

Atwood, T., Drake, M., & Myers, L. (2010). Book-tax conformity, earnings persistence and the association between earnings and future cash flows. *Journal of Accounting and Economics, 50*(1), 111–125.

Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: Comparative loss recognition timeliness. *Journal of Accounting and Economics, 39*(1), 83–128.

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

Calegari, M. (2000). The effect of tax accounting rules on capital structure and discretionary accruals. *Journal of Accounting and Economics, 30*(1), 1–31.

Chen, J. (2006). Development of Chinese small and medium-sized enterprises. *Journal of Small Business and Enterprise Development, 13*(2), 140–147.

Cho, J., Wong, J., & Wong, N. (2006). Book-tax differences and Inland Revenue audit adjustments in New Zealand. *Journal of Business Finance & Accounting, 33*(9–10), 1650–1667.

Choi, J., Kim, C., Kim, J., & Zang, Y. (2019). Audit office size, audit quality, and audit pricing. *Auditing: A Journal of Practice & Theory, 29*(1), 73–97.

Coppens, L., & Peek, E. (2005). An analysis of earnings management by European private firms. *Journal of International Accounting, Auditing and Taxation, 14*(1), 1–17.

Dâmaso, M. (2015). *Tax simplification in Portugal: The perception of the simplified regime for small companies in the context of income taxation [Doctoral dissertation, Universidade de Coimbra].* Universidade de Coimbra Theses Repository http://hdl.handle.net/10316/29035.

Dechow, P., & Dichev, I. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *Accounting Review, 77*(Supplement.), 35–59.

Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *The Accounting Review, 70*(2), 193–225.

Desai, M. (2005). The degration of reported corporate earnings. *Journal of Economic Perspectives, 19*(4), 171–192.

Dhaliwal, D. (1980). The effect of the firm's capital structure on the choice of accounting methods. *The Accounting Review, 55*(1), 78–84.

European Commission (EC). (2019). *Annual report on European SMEs 2018/2019.* EC. https://ec.europa.eu/growth/smes/sme-strategy/performance-review_en#annual-report.

Francis, J., & Yu, M. (2009). Big 4 office size and audit quality. *The Accounting Review, 84*(5), 1521–1552.

Guenther, D. (1994). Earnings management in response to corporate tax rate changes: Evidence from the 1986 tax reform act. *The Accounting Review, 69*(1), 230–243.

Guenther, D., Maydew, E., & Nutter, S. (1997). Financial reporting, tax costs, and book-tax conformity. *Journal of Accounting and Economics, 23*(3), 225–248.

Gupta, S., & Newberry, K. (1997). Determinants of the variability in corporate effective tax rate: Evidence from longitudinal data. *Journal of Accounting and Public Policy, 16*, 1–39.

Healy, P., & Wahlen, J. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons, 13*, 365–383.

Höglund, H., & Sundvik, D. (2019). Do auditors constrain intertemporal income shifting in private companies? *Accounting and Business Research, 49*(3), 245–270.

Hribar, P., & Collins, D. (2002). Errors in estimating accruals: Implications for empirical research. *Journal Accounting Research, 40*(1), 105–134.

Instituto Nacional de Estatística (INE) (2020). *Atividade Económica: 2019*. INE. https://www.ine.pt/xurl/pub/71888260.

International Federation of Accountants (IFAC) (2010). *The role of small and medium practices in providing business support to small and medium-sized enterprises*. IFAC. https://www.ifac.org/system/files/publications/files/the-role-of-small-and-mediu.pdf.

Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research, 29*(2), 193–228.

Judge, G., Hill, R., Griffiths, W., Lutkepohl, H., & Lee, T. (1988). *Introduction to the theory and practice of econometrics* (2nd ed.). John Wiley & Sons.

Katz, J., & Ott, R. (2006). If we could choose the way we pay: The impact of decision complexity on tax scheme preference. *Journal of Applied Business Research, 22*(3), 33–42.

Kothari, S., Leone, A., & Wasley, C. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics, 39*(1), 163–197.

Langli, J., & Svanström, T. (2014). Audits of private firms. In D. Hay, W. R. Knechel, & M. Willekens (Eds.), *The Routledge companion to auditing*. Routledge.

Leuz, C., Nanda, D., & Wysocki, P. (2003). Earnings management and investor protection: An international comparison. *Journal of Financial Economics, 69*(3), 505–527.

Lin, K., Mills, L., & Zhang, F. (2014). Public versus private firm responses to the tax rate reduction in China. *The Journal of the American Taxation Association, 36*(1), 137–163.

Marques, M., Rodrigues, L., & Craig, R. (2011). Earnings management induced by tax planning: The case of Portuguese private firms. *Journal of International Accounting, Auditing and Taxation, 20*, 83–96.

Mills, L., & Newberry, K. (2001). The influence of tax and non-tax costs on book-tax reporting differences: Public and private firms. *Journal of the American Taxation Association, 23*(1), 1–19.

Porcano, T. (1986). Corporate tax rates: Progressive, proportional or regressive. *Journal of the American Taxation Association, 7*, 17–31.

Procházka, D., & Molín, J. (2016). Book-tax conformity: The review of recent research and its implication for the IFRS adoption in Europe. *eJournal of Tax Research, 14*(1), 96–118.

Shevlin, T., & Porter, S. (1992). The corporate tax comeback in 1987: Some further evidence. *The Journal of the American Taxation Association, 14*(1), 58–79.

Skinner, D., & Sloan, R. (2002). Earnings surprises, growth expectations, and stock returns or don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies, 7*(2–3), 289–312.

Sundvik, D. (2016). Earnings management around Swedish corporate income tax reforms. *International Journal of Accounting, Auditing and Performance Evaluation, 12*(3), 261–286.

Sundvik, D. (2017a). Book-tax conformity and earnings management in response to tax rate cuts. *Journal of International Accounting, Auditing and Taxation, 28*, 31–42.

Sundvik, D. (2017b). A review of earnings management in private firms in response to tax rate changes. *Nordic Tax Journal, 1*, 151–161.

Tang, T. (2015). Does book-tax conformity deter opportunistic book and tax reporting? *An international analysis. European Accounting Review, 24*(3), 441–469.

Watrin, C., Ebert, N., & Thomsen, M. (2014). Book tax conformity and earnings management: Insights from European one and two-book systems. *The Journal of the American Taxation Association, 36*(2), 55–89.

Watts, R., & Zimmerman, J. (1986). *Positive accounting theory*. Prentice-Hall Inc..

White, H. (1980). A heteroscedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity. *Econometrica, 48*(4), 817–838.

Young, S. (1999). Systematic measurement error in the estimation of discretionary accruals: An evaluation of alternative modelling procedures. *Journal of Business Finance and Accounting, 26*(7/8), 833–862.