Financial reporting incentives, earnings management, and tax avoidance in SMEs

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Abstract

This paper examines earnings management and tax aggressiveness in SMEs. Firstly, we find a discontinuity around zero in the distribution of earnings, but not in the distribution of earnings change, and provide evidence that SMEs engage in accrual and real earnings management to beat zero earnings, to achieve a stable net income over the years and also when in situations of financial constraints. We also find an overall negative association between income-increasing earnings management and non-conforming tax avoidance. In addition, we show that SMEs are less tax aggressive in those settings where we have previously found that they engage in upward earnings management (i.e. small profits, smoothed net income, financial constraints). This suggests that under financial reporting incentives to report higher earnings, upward earnings management clearly prevail over tax aggressiveness. On the contrary, in settings without the pressure to report higher earnings, our findings suggest that SMEs may simultaneously engage in conforming and non-conforming tax avoidance to reduce taxes paid.

Keywords: Tax Avoidance, Financial Reporting Incentives, Discretionary Accruals, Real Earnings Management, SMEs, Earnings Targets, Financial Constraints.

JEL Classification: M41, M48.

Data Availability Statement: The data that support the findings of this study are available from the authors upon reasonable request.

1. Introduction

In this paper we study earnings management and tax aggressiveness in SMEs. First, we examine whether, under incentives to beat earnings benchmarks or report higher earnings, SMEs engage in accrual and real earnings management. Secondly, we analyse the association between earnings management and tax avoidance, and the role played by financial reporting incentives to increase earnings in this association.[1]

The literature on earnings management has mainly focused on listed firms, providing consistent evidence regarding the manipulation of accounting numbers to meet or beat certain earnings targets, such as zero earnings, last year's earnings or analysts' forecasts. A stream of studies has documented significant discontinuities around specific thresholds in the empirical distribution of earnings (e.g. Burgstahler and Dichev, 1997; Degeorge, Patel, and Zeckhauser, 1999), which suggests that firms engage in earnings manipulation activities to avoid reporting small losses or to exceed prior year's earnings. Although the evidence on the use of accrual-based earnings management under these incentives is mixed (Dechow, Richardson, and Tuna, 2003), there is clear previous evidence of engagement in real activities manipulation to beat earnings targets by US listed firms (Graham, Harvey, and Rajgopal, 2005; Roychowdhury, 2006; Gunny, 2010). There is also some evidence regarding earnings benchmarks and accrual-based earnings management in private firms (e.g. Coppens and Peek, 2005; Goncharov and Zimmermann, 2006). However, the incentives of SMEs to manage earnings, and the role that real earnings management play in them, may be different to those of large firms. Despite that, the research question on whether SMEs engage in earnings management to beat earnings targets has scarcely been analysed and, to the best of our knowledge, no study has considered the use of real activities manipulation by SMEs in this analysis.

According to the transaction cost theory, managers of both public and private firms may manipulate earnings to enhance the firm's credibility and reputation in order to get better terms of trade and decrease the transaction costs with stakeholders –i.e. creditors, suppliers, employees, customers– (e.g. Bowen, DuCharme, and Shores, 1995; Burgstahler and Dichew, 1997). However, specific characteristics of public and private firms, as well as the contexts in which they operate, imply clear differences between both

types of firms regarding the incentives to manage reported earnings (Graham et al., 2005). Capital market pressures may make listed firms likely to engage in earnings manipulation to exceed earnings thresholds (e.g. Beatty, Ke, and Petroni, 2002). On the contrary, although private firms, and consequently SMEs, are not subject to stock market pressure, their external financing funds are mainly obtained from financial institutions. Hence, in order to enhance their access to external financing, private firms have also the incentive to engage in upward earnings management either to report positive earnings or to increase reported earnings under financing constraints.

Tax motivations are also a key determinant of financial information reported by private firms (Ball and Shivakumar, 2005), as accounting decisions on the financial reporting process affect taxable income. Accordingly, firms face a trade-off between financial reporting incentives to report higher earnings and tax incentives to reduce taxable income (Scholes, Wilson, and Wolfson, 1992; Shackelford and Shevlin, 2001; Erickson, Hanlon and, Maydew, 2004; Hanlon and Heitzman, 2010). On one hand, in order to obtain financing funds from financial institutions that allow them to improve or to avoid lowering firm value, private firms have the incentive to discretionally increase reported income. On the other hand, in order to pay lower taxes, firms have the incentive to engage in income-decreasing earnings management, i.e., conforming tax avoidance. However, in the case of differences between accounting and tax laws, firms can take advantage of tax rules to minimize tax liabilities without affecting book income, i.e., non-conforming tax avoidance (Hanlon and Heitzman, 2010). Since the lower the amount of taxes paid, the higher the cash flow savings, the reduction of tax payments should be very relevant for SMEs due to their more limited channels of access to external financing in comparison with listed firms.

Based on the above, we first examine, in a sample of SMEs, whether there are discontinuities in the distributions of annual earnings and earnings changes around zero, as well as whether firm-year observations which just beat these earnings thresholds show higher levels of accrual and real earnings management than the rest of the sample. We expect SMEs to manage earnings to report small profits, which may enhance their access to financing funds as well as serving to minimize tax payments without drawing the attention of the tax authorities. Likewise, we analyse whether financially constrained SMEs manipulate earnings to increase reported income with the aim of not being penalised in their access to bank debt.

Our second objective is to examine the non-conforming tax avoidance behaviour of SMEs in relation to earnings management controlling for financial reporting incentives. Previous studies on the association between tax avoidance and aggressive financial reporting have mainly focused on US listed firms, analysing whether firms which are aggressive in financial reporting show more or less tax aggressiveness, but the reported evidence is mixed (e.g., Wilson, 2009; Frank, Lynch, and Rego, 2009, Lennox, Lisowsky and Pittman, 2013). In SMEs we expect this association to be determined by the financial reporting incentives to manage earnings upwards and the tax incentives to pay less taxes in these firms. In particular, in situations of no clear incentives to increase reported income we expect SMEs to engage both in downward tax-induced earnings management and non-conforming tax avoidance in order to minimize the taxes paid. In other words, we expect a negative relationship between aggressive financial reporting and tax aggressiveness. In contrast, in those settings where there are strong incentives to increase reported income (i.e., settings of beating earnings targets or financing constraints), we expect SMEs to engage in income-increasing earnings management, but this may affect their choices to engage in non-conforming tax avoidance practices. In such cases, we would expect a positive relation between financial and tax reporting aggressiveness if SMEs have the ability to report higher earnings and, at the same time, reduce tax payments. On the contrary, we would expect a less aggressive tax behaviour in these settings if upward earnings management, through real activities or accounting decisions, restricts the ability of SMEs to engage in non-conforming tax avoidance.

We examine our research questions in a sample of Spanish SMEs for the period 2006-2014[2]. According to previous earnings management research, Spain is one of the leading countries in the world with regard to beating earnings targets (Leuz, Nanda, and Wysocki, 2003; Bhattacharya, Daouk, and Welker, 2003). Regarding income tax law, taxable income in Spain is based on book income as it is in most European countries. However, according to the European Commission study on SMEs taxation in Europe (2015), Spain is the EU country with the highest incentives for SMEs to reduce the standard tax rate, and the European country where these incentives are more effective, i.e., the country where the reduction of the tax burden in relation to large companies is the highest. Moreover, Spain is the only European country which offers tax base, tax rate and tax credit incentives at the same time for small and micro corporations. This means that there still exists a high range of possibilities for Spanish SMEs to engage in non-conforming

tax avoidance, so both financial reporting incentives and tax avoidance incentives may coexist in our sample. Since banking institutions constitute the main source of external funds for SMEs (European Central Bank, 2018), the incentives to engage in earnings management should increase under this dependency. In addition, the high ownership concentration in SMEs and, consequently, the low separation between management and ownership, should imply that tax avoidance practices may be less related to opportunistic behaviour of managers (Desai and Dharmapala, 2006) and more with the generation of cash savings and their use as financial funds. Finally, in terms of the relevance in the Spanish economy, SMEs represent 99.9% of firms and provide the main source of employment, 66% (Spanish Department of Industry, 2015).

As earnings management measures, we use the discretionary accrual estimates based on the Jones' (1991) model modified by Dechow, Sloan, and Sweeney (1995), and the measures of real earnings management developed by Roychowdhury (2006). To measure non-conforming tax avoidance, we estimate the difference between the nominal tax rate which would correspond to each firm-year observation according to the Spanish legislation, and its effective tax rate. We also examine the robustness of our results to an average measure of three periods and to the other traditional measure of tax avoidance based on permanent differences used in the literature (effective tax rate).

Our findings show a positive and significant discontinuity around zero in the earnings distribution, which suggests that SMEs are concerned about reporting positive results. However, we do not find significant discontinuities around zero earnings change, which suggests that SMEs do not avoid reporting small earnings decreases. Nevertheless, we find that the highest frequencies in the empirical distribution of earnings change are observed in the first intervals both to the left and to the right of zero. This finding suggests that SMEs try to report similar annual earnings from one year to another but, contrary to listed firms, beating last year's earnings does not constitute a target for these firms. We also provide evidence consistent with SMEs engaging in accrual-based and real decisions-based earnings management in order to meet their earnings benchmarks. Our results show that firm-years which just beat zero earnings and report small earnings decreases or increases show higher levels of earnings management than the rest of the sample. In addition, we find that financially constrained firm-years show higher levels of upward accrual and real earnings management than firms without financing constraints.

When we examine the association between earnings management and tax aggressiveness, our preliminary results suggest that SMEs may try to avoid paying taxes using conforming and non-conforming tax avoidance practices in those settings where there is no the pressure to report higher earnings, whereas tax aggressiveness decreases when firms face incentives to report higher earnings. Our regression results confirm a negative relationship between signed earnings management and non-conforming tax avoidance. In addition, we also find that firm-years with small profits, smoothed income or under financial constraints, which are the settings in which we have previously found income-increasing earnings management, show less tax avoidance. In sum, we find a negative association between upward earnings management and tax aggressiveness for SMEs, together with less (more) tax aggressiveness in those settings where firms have (not) incentives to report higher income.

Our study contributes to both the literature on earnings management and tax avoidance. First, we provide novel evidence on earnings management practices of SMEs in relation to earnings targets. In particular, our findings show that these firms manage their earnings through both accruals and real operating decisions to beat zero earnings and to smooth earnings changes, but, in contrast to the usual findings in listed firms, not to exceed the previous year's earnings. This evidence, together with our findings that both accrual and real earnings management are used by SMEs to improve earnings figures in situations of financing constraints, suggests that SMEs are concerned with valuation issues to obtain external financing from financial institutions, but also with avoiding tax supervision. Second, our paper also contributes to the stream of the literature on the relationship between aggressive financial reporting and tax avoidance aggressiveness, which until now has mainly been focused on listed firms and accrual-based earnings management. Our findings show that, as minimizing tax payments is a key objective for SMEs, both conforming and non-conforming tax avoidance practices may coexist although, under financial reporting incentives to meet earnings benchmarks, these latter goals prevail over those linked to reducing tax payments.

This study can be of interest to researchers and regulators because it is closely related to the ongoing debate within international organizations, such as the OECD and the EU, about the provision of SME-specific tax rules and the role of the tax system in the decisions of SME owners and managers. Hence, the OECD (2015) and the European Commission (2015)'s surveys alert about the consequences of special tax rules for SMEs,

since it is observed that SMEs choose not to grow in order to avoid paying more taxes. Although many of the special SME tax rules are designed to support the growth and profitability of SMEs, our findings show that SMEs manage earnings to maintain stable earnings or report small profits and give evidence as well on the association between financial and tax reporting aggressiveness. Hence, we think our findings may be relevant to the authorities responsible for designing special tax rules for SMEs with the objective of conjugating a preferential tax treatment with addressing specific problems (e.g. access to finance) and encouraging the growth or development of SMEs.

The rest of the paper proceeds as follows. Section 2 reviews the related literature and develops our testable hypothesis. Section 3 describes the research design, sample, and data. Section 4 presents the empirical results and the final section concludes.

2. Related literature and hypotheses development

2.1. Earnings management and earnings benchmarks in SMEs

The earnings management literature has mainly focused on listed firms. In this context, previous studies - such as Hayn (1995), Burgstahler and Dichev (1997), Degeorge et al. (1999), Jacob and Jorgensen (2007)- have found that the distribution of earnings shows a discontinuity around zero earnings, previous year's earnings and earnings' forecasts by financial analysts. This evidence suggests that listed firms manage their earnings to meet earnings targets, and the literature has linked this behaviour to capital market pressures (Hope, Thomas, and Vyas, 2013). Although a recent and increasing stream of the literature compares the extent of earnings management between public and private firms[3], the research on earnings targets in private firms has been quite limited until now.

These studies, as those on listed firms, find discontinuities around zero in the empirical distributions of earnings in levels for private firms (Coppens and Peek, 2005; Goncharov and Zimmermann, 2006; Marques, Rodrigues, and Craig, 2011), which suggests that private firms also engage in earnings management to avoid reporting small losses. In this sense, Coppens and Peek (2005), by using a sample of large private firms in eight European countries, find abnormal levels of current assets and depreciation in the interval immediately to the right of zero. However, they do not find significant discontinuities around zero earnings change in the countries analysed, so they conclude that, in contrast to public firms, private firms do not avoid earnings decreases. This evidence is consistent

with Beatty et al.'s (2002) findings, which show that US private banks do not avoid reporting small declines in earnings using discretionary security loans and gains. Thence, prior evidence seems to indicate that earnings management to maintain a persistent pattern of earnings growth is capital-market driven. Summarizing, prior research has documented that public and private firms manipulate their financial statements to achieve certain earnings targets, albeit with some differences.

Incentives to manage earnings are also different. Private firms, and in particular SMEs, are concentrated in terms of ownership and, as a consequence, agency conflicts between managers and owners are not so important as in public firms. This would lead to less use of earnings management induced with the purpose of circumventing contracts designed to reduce agency conflicts (Beatty and Harris, 1998). In addition, private firms can more easily use private channels of communication with their stakeholders, which would diminish the role of public financial information in reducing information asymmetries (Ball and Shivakumar, 2005).

Previous research also concludes clearly that the financial information disclosed by private firms is more influenced by taxation than that disclosed by public firms. Ball and Shivakumar (2005) argue that financial information reported in private firms is more likely to be determined by income tax policies. Burgstahler, Hail, and Leuz (2006) show that firms in countries with a higher tax alignment of financial accounting engage in more earnings management. This is observed to a greater extent in private than in public firms, because capital market scrutiny mitigates this effect in public firms. Goncharov and Zimmerman (2006) also find that private firms in Russia manage earnings downward to reduce tax expense, but this conforming tax avoidance practice is reduced in public firms exposed to capital market pressures. A similar result is obtained by Marques et al. (2011), who find that Portuguese private firms with higher income tax rates are more likely to manipulate earnings to reduce them to close to zero.

According to Bonacchi, Marra, and Zarowin (2019), the organizational structure of the firm is another factor that can affect earnings quality for tax reasons, since they find that stand-alone private firms have stronger tax minimization incentives than public and private business groups. The reason is that business groups disclose consolidated reports, which are not used for tax purposes; whereas private firms that are stand-alone entities report unconsolidated financial statements, which are used for both financial reporting

and tax purposes. We consider this to be particularly relevant for SMEs, since they are usually organized as single legal entities. All these empirical findings are consistent with the survey of stakeholders of SMEs by Maingot and Zhegal (2006) about the accounting standards in these types of firms in Canada. These stakeholders (managers, owners, preparers, auditors) believe that the financial statements are mainly prepared for taxation purposes and borrowing.

The information provided through financial statements is still important for private firms in general and SMEs in particular in their relations with providers of external funds. Berger and Udell (2006) conclude that financial institutions use hard information (i.e. financial statements) to take their decisions regarding lending to SMEs, and Allee and Yohn (2009) find that, in a non-regulated environment, small privately held firms that draw up accrual-based financial statements benefit from a lower cost of credit from creditors. Therefore, although they are not subject to capital market pressure, private firms and, in particular, SMEs face incentives to increase reported earnings to access external financial sources in better conditions. In this sense, Moreira (2006) examines the incentives of upward earnings management in a sample of private Portuguese firms and finds that the likelihood of reporting profits is higher for firms with higher financial needs measured through financial leverage.

The tax-motivation induces firms to manage earnings downward to save paying taxes, but they may also avoid reporting losses and prefer to report small profits, since firms with small losses are more likely to be investigated by the tax authorities (Goncharov and Zimmermann, 2006). Firms might also have incentives to smooth income for tax reasons, because reporting higher income implies higher tax payments and reporting lower earnings increases the probability of investigation by the tax authorities (Herrmann and Inoue, 1996). This tax motivation is used by Coppens and Peek (2005) to explain earnings smoothing in Belgian and Italian private firms. However, private firms' preference for smoothness might be driven by their concerns about the perceptions of their creditors, which would lead them to provide an image of stable business (Graham et al*.,* 2005).

Therefore, both tax incentives and firm valuation by their stakeholders encourage private firms to manipulate their financial statements to achieve certain earnings targets. Based on previous literature, to conduct our research we will first analyse the distribution of net income and net income change to investigate whether there are discontinuities in these

distributions. According to the aforementioned incentives for SMEs, we expect to find a discontinuity in zero earnings but not in zero earnings growth. In order to homogenise the formulation of hypotheses, we pose them in their null form:

H1a: There is not a discontinuity around zero earnings.

H1b: There is not a discontinuity around zero earnings change.

Once the distribution of earnings has been examined, we will analyse the type of earnings management employed by SMEs suspected of this practice. Most research has mainly focused on accrual-based earnings manipulation, but the studies of Roychowdhury (2006) and Gunny (2010) incorporated the use of real earnings management in listed firms to the literature of meeting earnings targets. Roychowdhury (2006) found abnormal levels of cash flows from operations, production costs and discretionary expenses in public firms just meeting zero earnings and analyst forecasts; and Gunny (2010) provided similar evidence in firms that meet zero earnings and zero earnings growth. This evidence is consistent with firms managing earnings through real activities to meet certain earnings benchmarks. Nevertheless, the specific research on the type of earnings management employed by private and, in particular, SMEs, is limited. To the best of our knowledge, no paper has examined both the role of accrual and real earnings management in meeting earnings targets in SMEs. The study of Campa and Camacho-Miñano (2015) is one of the first that has examined both accrual and real activities manipulation to increase profits in bankrupt SMEs. They find that, on average, in firms close to bankruptcy managers prefer to engage in real earnings management rather than in accrual earnings management.

In our analyses, we define as suspect firms those firm-years that, according to previous studies, have incentives to engage in earnings management, i.e., firm-years that either report small profits or small increases in profits or suffer financing constraints. Then, we examine whether firms in these situations engage in accrual and/or real earnings management. In suspect firm-years with small profits and financing constraints we expect to find higher levels of accrual and real earnings management to increase reported profits. We are uncertain about how suspect firms that beat last year's earnings behave in relation to earnings management because this threshold may be less relevant for SMEs, since they are not under capital markets pressures. In the same way as in H1, we pose H2 in its null form:

H2: Suspect firm-years engage in similar levels of accrual and real earnings management as the rest of the sample.

2.2. Earnings management and non-conforming tax avoidance in SMEs

Tax avoidance can be defined broadly as those decisions that reduce explicit taxes (Hanlon and Heitzman, 2010), and this is the approach we follow in this paper. From this perspective, tax avoidance can be considered the more general concept for tax aggressiveness and does not necessarily imply an illegal practice.[4] In order to minimize their taxes, firms may carry out conforming and non-conforming tax avoidance practices. Conforming tax avoidance practices are tax practices that reduce the financial statement (book) income as well as taxable income; whereas non-conforming tax avoidance practices, such as tax advantaged investments, reduce only taxable income, leading to a reduction in the effective tax rate. Tax avoidance has become a very relevant subject in the current literature because of its increasing importance over the years as the breach between the nominal tax rate and the effective tax rate has increased due to a reduction in the latter (Dyreng, Hanlon, Maydew, and Thornock, 2017).

Unlike the rest of corporate costs and expenses, taxes imply a sacrifice of corporate cash flows which is not operationally necessary to improve revenues, so this creates an incentive in firms to reduce taxes through tax avoidance practices. Under alignment between accounting income and tax income, firms may engage in income-decreasing earnings management to pay lower taxes and, consequently, save cash flows (i.e. conforming tax avoidance). However, on the other hand, lower reported accounting earnings imply higher non-tax costs, such as a lower firm valuation, a higher probability of debt covenant violations and reputational damage (e.g. Cloyd, Pratt, and Stock, 1996). Additional costs would be those consequences of tax income restatements and potential sanctions by tax authorities[5], as well as the time/effort and the transaction costs of tax planning strategies (e.g. Chen, Chen, Cheng, and Shevlin, 2010), which will be also associated to non-conforming tax avoidance. Therefore, firms frequently face a trade-off between aggressive financial and tax reporting incentives, and thus take into account the value of the expected tax savings and the costs associated with conforming tax avoidance (e.g. Scholes et al., 1992; Shackelford and Shevlin, 2001).

However, firms may also implement non-conforming tax avoidance practices if accounting decisions are, up to a certain point, independent of tax decisions, giving rise

to differences between the income reported in the financial statements and the income reported to the tax authority (book-tax gap). Thus, under incomplete alignment between tax and accounting, firms do not always have to face the trade-off between aggressive financial and tax reporting incentives; they can make aggressive financial and tax reporting decisions at the same time (i.e. upward earnings management in combination with downward manipulation of taxable income). This is confirmed by Wilson (2009) and Frank et al. (2009), who find a positive association between tax shelter and tax aggressiveness, respectively, with aggressive financial reporting. In contrast, Lennox et al. (2013) find that tax aggressive firms are less likely to commit accounting fraud, which means that aggressive financial reporting and tax aggressiveness are negatively related.

Previous research concerning the relationship between aggressive financial reporting and tax aggressiveness has been conducted in US listed firms, which are firms with valuation incentives to report higher earnings than private firms, due to the pressure of public capital markets. Non-conforming tax avoidance practices have been examined less in private firms, and only barely in SMEs, where a different behaviour might be expected. In this sense, Graham, Hanlon, Shevlin, and Shroff (2014) show that managers of private firms are less concerned about financial reporting and reputational or media effects of tax strategies than those of public firms. Cloyd et al. (1996) and Mills and Newberry (2001) provide evidence that non-tax costs associated to tax planning strategies are less significant in private than in public firms because private firms have a more concentrated ownership and are not subject to control by the public capital market, which implies that reported book income is not a key factor in compensation plans or in determining the market value of the firms. Due to the more limited financing channels for private firms, the cash savings of engaging in tax avoidance may also be seen as an additional internal financing fund (Law and Mills, 2015; Edwards, Schwab, and Shevlin, 2016)[6]. According to this, private firms, and in particular SMEs, could engage in tax avoidance practices at a lower cost than listed firms: first because the trade-off between aggressive financial reporting incentives and tax incentives due to conforming tax avoidance is less harmful, and second because the costs of non-conforming tax avoidance are also less relevant for private firms whereas the cash savings obtained through this practice can be very significant for them.

Therefore, in contrast to the findings of Frank et al. (2009) for listed firms, we expect a negative association between signed earnings management and non-conforming tax

avoidance for SMEs. This means that more aggressiveness in financial reporting leads to less tax aggressiveness, but also suggests that SMEs may engage in tax avoidance practices at the same time as in downward earnings management. Nevertheless, in those settings when firms have strong incentives to increase reported income, we expect aggressive financial reporting through upward earnings management, but we are not sure about the engagement in non-conforming tax avoidance, which may be conditioned by aggressive financial reporting behaviour. For instance, if a firm reduces research and development expenses to increase reported profits, and these expenses have tax advantages, the aggressive financial reporting behaviour will limit the engagement in tax avoidance. On the contrary, if firms have the ability to engage in mechanisms of non-conforming tax avoidance, such as tax advantaged investments, while they discretionarily increase reporting earnings, we can expect an engagement in both aggressive financial reporting and non-conforming tax avoidance.

To examine the association between earnings management and non-conforming tax avoidance we will consider accrual earnings management and settings of high financial reporting incentives to increase reported income, since outside these settings proxies for real earnings management do not necessarily indicate earnings manipulation (e.g. Gunny, 2010). Accordingly, we pose the following hypotheses in their null form:

H3: Signed accrual earnings management is not associated with non-conforming tax avoidance.

H4: Firm-years with financial reporting incentives to report higher income are not associated with non-conforming tax avoidance.

3. Research design and data

3.1. Accrual-based earnings management measure

We use the signed residuals of the Jones' (1991) model, modified by Dechow et al. (1995) to measure accrual earnings management:

$$\frac{TA_t}{Assets_{t-1}} = \beta_0\left(\frac{1}{Assets_{t-1}}\right) + \beta_1\left(\frac{\Delta Sales_t - \Delta REC_t}{Assets_{t-1}}\right) + \beta_2\left(\frac{PPE_t}{Assets_{t-1}}\right) + \varepsilon_t, \qquad (1)$$

where *TA* is total accruals, Δ*Sales* and Δ*REC* represent, respectively, the change in sales and account receivables, and *PPE* is property, plant and equipment. All variables are scaled by lagged total assets ($Assets_{t-1}$).

3.2. Real earnings management measures

We use the residuals of the three models developed by Roychowdhury (2006) to measure the three methods of manipulating real activities: sales manipulation, abnormal production costs and abnormal discretionary expenses.

The model to measure sales manipulation is based on the effect that actions such as increased price discounts or more lenient credit terms, negotiated in order to temporarily boost sales revenues, have on cash flow from operations. We use model (2) to estimate the normal level of cash flow from operations:

$$\frac{CFO_t}{Assets_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{Assets_{t-1}}\right) + \beta_1\left(\frac{Sales_t}{Assets_{t-1}}\right) + \beta_2\left(\frac{\Delta Sales_t}{Assets_{t-1}}\right) + \varepsilon_t, \quad (2)$$

where *CFO* is cash flow from operations estimated as operating income less total accruals, *Sales* and Δ*Sales* represents sales and change in sales, respectively. All variables, including the intercept, are scaled by lagged total assets ($Assets_{t-1}$). We also include an unscaled intercept (Roychowdhury, 2006).

Another way of increasing benefits is overproduction, in order to report a lower cost of goods sold. We use model (3) to estimate the normal level of production costs:

$$\frac{PROD_t}{Assets_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{Assets_{t-1}}\right) + \beta_1\left(\frac{Sales_t}{Assets_{t-1}}\right) + \beta_2\left(\frac{\Delta Sales_t}{Assets_{t-1}}\right) + \beta_3\left(\frac{\Delta Sales_{t-1}}{Assets_{t-1}}\right) + \varepsilon_t, \quad (3)$$

where *PROD* is production costs defined as the sum of costs of goods sold, which we estimate from the profits and losses account, plus the change in inventory in the year. The other variables have been defined previously.

The third real earnings management measure is based on the reduction of discretionary expenses. We estimate the normal level of discretionary expenses with model (4):

$$\frac{DISPEX_t}{Assets_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{Assets_{t-1}}\right) + \beta_1\left(\frac{Sales_{t-1}}{Assets_{t-1}}\right) + \varepsilon_t, \quad (4)$$

where *DISPEX* is discretionary expenses and the other variables are calculated as defined previously. Since in Spain SMEs do not report advertising or general and administrative expenses specifically, we measure *DISPEX* through operating expenses which are not production costs, salaries or amortizations and depreciations.

We estimate models (1) to (4) cross-sectionally for each year and industry group based on the Spanish classification of activities at 1 digit in order to have a minimum of 15 observations for each regression. For every firm-year, the residuals of the regressions represent, respectively, discretionary accruals, abnormal cash flow from operations (*ACFO*), abnormal productions costs (*APROD*), and abnormal discretionary expenses (*ADISPEXP*). Firms that manage earnings upward through income-increasing earnings management will show abnormally high discretionary accruals, and, in relation to real activities manipulation, abnormally low cash flows from operations, abnormally high productions costs, and/or abnormally low discretionary expenses (Cohen and Zarowin, 2010). Accordingly, for abnormal cash flows and abnormal discretionary expenses, we multiply the residuals of models (2) and (4) by (-1), so that higher values of these variables represent greater increases of earnings. We define an aggregate measure of real earnings management, *REM*, as *ACFO+APROD+ADISEXP* (Kim, Park, and Wier, 2012; Ge and Kim, 2014).

3.3. Non-conforming tax avoidance measure

Prior research uses total effective tax rate (ETR), defined as tax expense over pre-tax income, or cash effective tax rate (Cash ETR), calculated as cash tax paid over pre-tax income, to measure corporate tax avoidance. Whereas ETR is not affected by temporary differences (for instance, accelerated depreciation), these do affect Cash ETR. To avoid confusing interpretations of these ratios, both are generally calculated taking positive values of pre-tax income, and observations lower than zero or higher than one are either truncated to zero and one, respectively, or eliminated. (Dyreng, Hanlon, and Maydew, 2008; Chen et al., 2010; Badertscher, Katz, and Rego, 2013; Koester, Shevlin, and Wangerin, 2017).

Since we are analysing tax avoidance in SMEs, of which reported information is more limited than that of big firms[7], we rely on a measure of tax avoidance based on permanent differences. Following previous studies, we first impose the usual requirements for calculating ETR: we consider only observations with positive pre-tax income and truncate the observations of ETR outside the interval [0,1]. We use a measure based on one year since our measures of earnings management are also constructed at the firm-year level.

We calculate our measure of non-conforming tax avoidance, *TAXDIF*, for each firm-year as the difference between the statutory tax rate that corresponds to this firm-year according to the tax legislation and its ETR. Given that the statutory tax rate has changed in the sample period and two Spanish regions have different statutory tax rates (i.e. Basque Country and Navarre)[8], which may affect the ETR, we use *TAXDIF* as a proxy for tax aggressiveness. Thus, we consider as tax aggressive firms, those firm-year observations with positive values of *TAXDIF*, i.e., observations whose ETR is lower than their statutory tax rate; whereas we define as non-tax aggressive firms those observations whose *TAXDIF* is equal or lower than zero.

Nevertheless, we also calculate a measure of long-run *TAXDIF* (*TAXDIF3y*) considering an average of three consecutive years (Dyreng et al., 2008; Badertscher et al., 2013; Koester et al., 2017; Khan, Srinivasan, and Tan, 2017). To assess the robustness of our results, we also repeat all of our analyses by using *ETR* and a measure of long-run ETR (*ETR3y*). In this case, we require the sum of pre-tax income in three consecutive years to be positive (Dyreng et al., 2008).

3.4. Methodology

3.4.1. Analysis of the earnings and earnings changes distributions

We start our analyses by examining the distributions of net income and net income change. Studies such as Hayn (1995), Burgstahler and Dichev (1997), and Degeorge et al. (1999) have documented significant discontinuities in the distribution of reported earnings and, to a lesser extent, earnings changes around zero, which may be consistent with earnings management practices to report small profits or small earnings increases. Thus, we analyse the frequency distribution for net income and change in net income by examining graphically the shapes of the histograms of scaled (by lagged total assets) net income and net income change with widths of 0.01[9]. To test the statistical significance of

the discontinuities in a given interval around earnings targets, we use the test statistic proposed by Burgstahler and Dichev (1997):

$$\tau = \frac{n_a - n_e}{\sigma}, \tag{5}$$

where τ is the test statistic approximately distributed under a normal distribution; n_a is the actual number of observations in the interval, n_e is the expected number of observations in the interval, calculated as the average of the number of observations in the two immediately adjacent intervals; σ is the standard deviation of the difference between n_a and n_e, estimated as the square root of $Np_i(1-p_i)+0.25N(p_{i-1}+p_{i+1})(1-p_{i-1}-p_{i+1})$, where N is the total number of observations and p_i is the proportion of observations in the interval i.

Although most research on this topic assumes that the discontinuities in the distribution of reported earnings and earnings changes around certain targets are consistent with earnings management practices, some studies, such as Dechow et al. (2003), question whether accrual earnings management provides a complete explanation for the discontinuity observed in the earnings distribution around zero. In this sense, Dechow et al. (2003) find that both small profit and small loss firms have similar levels of discretionary accruals and a similar proportion of positive discretionary accrual firms. Based on that and that the discontinuity in the distribution increases when they focus on firms with negative discretionary accruals, they conclude that accrual earnings management cannot completely explain the discontinuity. Dechow et al. (2003) propose alternative explanations, albeit without testing some of them. The first one is that managers take real actions to avoid reporting a loss. In our research design, to assess whether the discontinuities are consistent with earnings management practices, we take into account some of the potential explanations raised by Dechow et al. (2003). Thus, we incorporate measures of real earnings management in our analyses and we also compare earnings management in firms with small profits and with small losses.

3.4.2. Incentives to engage in earnings management

The model to assess whether firm-years which present strong incentives to engage in income-increasing earnings management (suspect firm-years) really engage in these practices is the following, based on Roychowdhury (2006):

$$EM = \beta_0 + \beta_1 SUSPECT + \beta_2 SIZE + \beta_3 GROW + \beta_4 ROA + \sum_t \beta_t Year + \sum_j \beta_j Industry + \varepsilon, \quad (6)$$

where *EM* is either *DACC*, *ACFO*, *APROD*, *ADISEXP*, or *REM*, that is, the signed earnings management measure, and *SUSPECT* is a dummy variable which takes value 1 for observations inside the setting where there are incentives to manage earnings upwards, and 0 otherwise. In particular, we consider the three next settings: (a) Zero earnings: firm-year observations whose net income divided by lagged total assets is between 0 and 0.01, and 0 otherwise. (b) Last year's earnings: firm-year observations whose change in net income divided by lagged total assets is between 0 and 0.01, and 0 otherwise. We also consider those firm-year observations whose change in net income divided by lagged total assets is between -0.01 and 0, and 0 otherwise. (c) Financial restrictions: firm-year observations in the last tercile of the Kaplan and Zingales' (1997) measure of financial constraints or in the last tercile of the leverage ratio[10]. To control for systematic variation of earnings management measures, the regression includes the following control variables: firm size (*SIZE*), measured as the natural logarithm of net sales; return on assets (*ROA*), calculated as operating income divided by total assets; and growth opportunities (*GROW*), estimated as net sales divided by lagged net sales. We also include year and industry dummy variables to control for year and industry fixed effects. We estimate ordinary least squares (OLS) regressions using *t*-statistics based on standard errors clustered at the firm level, which are robust to both heteroskedasticity and within firm serial correlation (Petersen, 2009).

3.4.3. Tax avoidance and earnings management

To examine the association between earnings management and tax avoidance, since our hypothesis is that tax avoidance may be affected by earnings management and financial reporting incentives to report higher earnings, we consider tax avoidance as the dependent variable. As independent variables we include accrual earnings management plus the settings of suspect firms-years, where prior literature has given evidence consistent with firms managing earnings through real activities to meet or beat earnings targets. At first, we do not include real earnings management measures in this last analysis because, in settings where incentives to manage earnings are not particularly strong, these proxies, which are abnormal levels of real transactions, may be capturing behaviour other than

intentional manipulation (Gunny, 2010), such as unusual business circumstances. We estimate the following cross-sectional regression:

$$TAXDIF = \beta_0 + \beta_1 SUSPECT_1 + \beta_2 SUSPECT_2 + \beta_3 SUSPECT_3 + \beta_4 DACC + \beta_5 SIZE + \beta_6 GROW + \beta_7 ROA + \beta_8 BNK + \beta_9 TANG + \beta_{10} CASH + \sum_t \beta_t Year + \sum_j \beta_j Industry + \varepsilon, \quad (7)$$

where *TAXDIF* is our proxy for non-conforming tax avoidance. $SUSPECT_1$, $SUSPECT_2$, and $SUSPECT_3$ are three different dummy variables that take value 1 in a specific setting of suspect firms, and zero in the rest of the sample. These suspect intervals are, respectively: firm-years reporting small profits (1), smoothing net income (2), and suffering financing constraints (3). *DACC* is signed discretionary accruals. We control for variables that have been shown to be associated with tax avoidance activity by prior literature (e.g. Dyreng et al., 2008; Frank et al., 2009; Wilson, 2009; Chen et al., 2010; Badertscher et al., 2013). We include firm size (*SIZE*) to control for economies of scales in tax planning and growth opportunities (*GROW*) as growing firms may invest more in tax favoured assets. We control for firm profitability, by considering the return on assets (*ROA*), since more profitable firms may have greater incentives or need to avoid taxes. We include the ratio of bank debt to total debt (*BNK*) as a proxy for financial leverage and to capture the debt tax shield. Firms with greater financial leverages may have lower incentives to engage in tax avoidance practices as a consequence of the tax benefits of debt financing. To control for the effect of capital intensiveness of a firm, which may be associated with tax advantages, we include the ratio of tangible fixed assets to total assets (*TANG*). We also control for cash holdings, *CASH*, given that firms with more cash may have fewer incentives to minimize tax burdens. In addition, we include year and industry dummy variables to control for year and industry fixed effects. We estimate ordinary least squares (OLS) regressions using *t*-statistics based on standard errors clustered at the firm level, which are robust to both heteroskedasticity and within firm serial correlation (Petersen, 2009).

3.5. Sample

Our sample is made up of SMEs. Based on the criteria of the European Commission (Regulation 2014/651, June 2014, and Recommendation 2003/361, May 2003) we define SMEs as firms "which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR

43 million". For financial reporting quality reasons, we do not include micro-enterprises in our analyses, which are those firms which employ fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million. We obtain the information from SABI (*Bureau van Dijk*), for the period 2004-2014. Since we use annual changes in variables and lagged variables in certain analyses our sample covers the period 2006-2014.

We apply the usual filters to detect and eliminate errors and outliers in the information reported. As a first filter we eliminate observations which present errors (positive expenses) or loss values for the variables of our study, and whose equity, fixed assets, current assets, current liabilities are less than 1,000€. Once we calculate our variables we winsorize them at 1% and 99%. Since we carry out two different analyses, the sample for the study on earnings management incentives is different from that on the relation with tax avoidance. For this second study we also require that firms have a positive pre-tax income. Accordingly, for the first analysis we obtain a sample of 51,558 firm-year observations, whereas the sample is of 42,761 for the second analysis.

Table 1, in Panel A, reports descriptive statistics (i.e. mean, median, standard deviation, 10th percentile and 90th percentile) for all variables used in the analyses for the full sample (descriptive statistics for the sample used in the second analysis are similar to those tabulated). Mean values of earnings management measures (*ACFO*, *APROD*, *ADISPEXP* and *DACC*) are very close to zero, as expected. The variables regarding different firm characteristics show a significant level of dispersion in their values, reflecting the heterogeneity of our firm-year sample. Panel B of Table 1 presents descriptive statistics for our measures of tax avoidance estimated from the second sample. The mean (median) values of *TAXDIF* and *TAXDIF3y* suggest that the firm-year's *ETR* is slightly lower (equal to) than its statutory tax rate, but the dispersion of these variables indicates that our sample comprises aggressive and non-aggressive tax avoidance firms.

[INSERT TABLE 1]

4. Empirical results

4.1. Discontinuities in earnings and earnings change distributions

Figure 1, in Panel A, displays the empirical distribution of net income scaled by lagged total assets in a window around zero (from -0.15 to +0.15 intervals). Graphically, we can observe a positive discontinuity between the interval [-0.01; 0), the interval next to zero by the left, and the interval [0;0.01), the first interval next to zero on the right. The interval immediately to the left of zero has 1,799 firm-year observations with a negative test statistic of the standardized differences, which is highly significant (*p*-value=0.00); whereas the first interval to the right of zero has 12,213 observations. Based on the τ statistic, this number of observations is statistically higher than the number of expected observations (*p*-value= 0.00). Moreover, there is a significant and negative discontinuity between the first and the second intervals to the right of zero, since the number of firm-year observations falls in the second interval to 7,765, which is significantly lower than expected (τ_{+2}= -10.21; *p*-value= 0.00). Furthermore, similar to the evidence documented by extant previous literature for both public and private firms, we find that in our sample of SMEs, the distribution of scaled net income only shows a significant peak in the first interval to the right of zero. This evidence suggests that managers of SMEs have strong incentives to report small profits or to avoid reporting small losses. Therefore, we reject the null-hypothesis H1a.

[INSERT FIGURE 1]

With regard to the other earnings target (last year's earnings), Panel B of Figure 1 displays the histogram of changes in annual net income scaled by lagged total assets, in which we observe that the distribution of net income change follows a different pattern to that of net income. In the distribution of net income change, we find a significant and positive discontinuity between the second and the first interval next to zero on the left. Thus, the number of observations increases from 4,891 (τ_{-2}=-27.9, *p*-value=0.00) in the second interval to the left of zero, [-0.02; -0.01), to 11,478 in the interval [-0.01; 0.00), with a standardized difference of 31.51 (*p*-value=0.00). Likewise, the number of observations in the first interval next to zero on the right is over-represented (i.e. 11,250; τ_{+1}= 30.79, *p*-value=0.00), similarly to the first interval immediately to the left of zero; so we fail to reject our null-hypothesis H1b. However, we also observe a significant negative

discontinuity between the first and the second intervals next to zero on the right, since the number of firm-year observations falls to 4,405 in the interval [0.01; 0.02), which is statistical and significantly under-represented (τ-statistic=-31.84; *p*-value=0.00). Therefore, our findings suggest that rather than avoid reporting earnings decreases, SMEs try to reach a similar net income (below or above) to that of last year. This configuration of the distribution of scaled net income change in our SME sample is different to that observed in prior research for listed firms but may confirm previous results in private firms. Whereas Burgstahler and Dichev (1997) and Degeorge et al. (1999) find a large jump in the distribution around zero earnings change in a sample of listed firms, Coppens and Peek (2005) do not observe significant discontinuities around zero earnings change in a sample of private firms from different European countries.

4.2. Earnings management in suspect firms

The findings from the analysis of the distributions of net income and net income change are consistent with SMEs having strong incentives to avoid reporting small losses, as well as to report similar earnings to those of the last year. In order to test whether the firms included in these suspect intervals really engage in accrual-based and real-based earnings management practices we estimate the regression model (6).

Firstly, we consider as suspect firm-years those observations in the interval next to the right of zero (small profits), and we test whether the levels of accrual-based and real earnings management measures in this suspect sample are different to the rest of the sample (non-suspect firm-year observations). Thus, we define the variable $SUSPECT_{1a}$ in model (6) as a dummy variable that is set equal to 1 if net income divided by lagged total assets is greater than or equal to 0 but less than 0.01, and zero otherwise. Panel A of Table 2 reports the results from the estimation of model (6), where we observe that in all columns the coefficients on $SUSPECT_{1a}$ are positive and significant (at the 1% level).[11] This suggests that these suspect firm-years have higher income-increasing discretional accruals, lower abnormal cash flows, higher abnormal production costs and lower discretionary expenses than the rest of the sample, which is consistent with their engagement in accounting and real earnings management practices to increase their net income. Nevertheless, Dechow et al. (2003) argue that if the reason that explains the discontinuity observed in the intervals around 0 is earnings management to avoid reporting a loss, we should expect firms with small profits to have higher levels of upward

earnings management than firms with small losses. Hence, we define an alternative dummy variable, $SUSPECT_{1b}$, which is set equal to 1 if net income divided by lagged total assets is greater than or equal to 0 but less than 0.01 (small profits), and zero if net income divided by lagged total assets is greater than or equal to -0.01 but less than 0 (small losses). Panel B of Table 2 shows that the coefficients on $SUSPECT_{1b}$ are positive and significant at the conventional levels for all earnings management measures. These findings suggest that small profit firms engage in upward earnings management to a greater extent than small loss firms.

[INSERT TABLE 2]

Secondly, in Table 3 we focus on the firm-years that are suspected of having engaged in earnings management to meet zero earnings growth. Based on the findings reported above, in this analysis we report results both for those firm-years that in the distribution of scaled net income change fall within the interval next to zero on the right and those that fall in the interval next to zero on the left. Panel A of Table 3 shows the results of the regression of earnings management on $SUSPECT_{2a}$ and control variables, where $SUSPECT_{2a}$ is a variable that takes the value 1 for small earnings increases (equal to 0 but less than 0.01), and zero otherwise. The results show that the coefficients on $SUSPECT_{2a}$ are positive and significant at the 1% level in 5 out of 6 proxies. Only for the abnormal cash flow model is the coefficient on $SUSPECT_{2a}$ not significant at conventional levels.

[INSERT TABLE 3]

Panel B of Table 3 displays the results considering as suspects those firm-years in the first interval next to zero on the left in the distribution of scale net income change (small earnings decreases). The coefficients on $SUSPECT_{2b}$, which is a variable that takes the value 1 for earnings change between -0.01 and 0.00, and zero otherwise, are positive and highly significant (at the 1% level) regardless of which proxy for earnings management is considered. Although the results are not tabulated, we also consider as suspect firms those firm-years whose earnings change is between -0.01 and +0.01 (small earnings decreases and increases jointly), and we find that the coefficients of the suspect variable are positive and highly significant (at the 1% level) in all regressions estimated for each earnings management proxy considered. Therefore, our findings suggest that firms may

implement earnings management practices to reach a similar net income (slightly above or below) to that of the previous year.

In the following analysis, we extend the concept of suspect firms from earnings targets to incentives to manage earnings because of financing constraints. Table 4 shows the results of regressing earnings management measures on suspect variables which take the value 1 in the case of financing constraints, and zero otherwise. We use two proxies for financing constraints, (1) Kaplan and Zingales index, *KZ* (see Panel A), and (2) the leverage ratio, *LEV* (Panel B). We rank firm-years according to both proxies and we define as suspect firm-years those in the top tercile of the distributions of *KZ* ($SUSPECT_3$) and *LEV* ($SUSPECT_4$), respectively[12]. In both panels, we see that the coefficients on $SUSPECT_3$ and $SUSPECT_4$ are positive and highly significant in all regressions. These findings are consistent with the hypothesis that financially constrained firms upwardly manage their earnings more than financially unconstrained firms. Based on our findings, we reject the null-hypothesis H2.

[INSERT TABLE 4]

4.3. Distribution of earnings and earnings change by tax reporting aggressiveness

As a preliminary approach to examine the relationship between tax avoidance and earnings management, we have analysed the histograms of net income and net income change in two subsamples: tax aggressive firm-years and non-tax aggressive firm-years. The identification of both groups is based on the difference between the statutory tax rate and the effective tax rate (*TAXDIF*). Recall that those firm-years with negative or zero values of *TAXDIF* are considered non-tax aggressive, while those with positive values of *TAXDIF* are tax aggressive firm-years, i.e., they implement non-conforming tax avoidance practices.

Focusing on net income data, Figure 2 charts the empirical distribution of annual net income for aggressive (Panel A) and non-aggressive firm-years (Panel B). Note that the number of firm-years next to zero on the left is almost zero, since, to estimate the effective tax-rate, we require firms to have a positive pre-tax income. Comparing the two panels of Figure 2, we see that the peak of distribution in both cases is placed in the interval next to zero by the right. However, there are differences between the two groups. In the tax aggressive firm-years group (Panel A), the distribution of earnings seems to be smooth to

the right of zero, where there are not significant discontinuities between the intervals (τ_{+2}= 1.66, *p*-value=0.10; τ_{+3}= -1.36, *p*-value=0.17). In contrast, for non-tax aggressive firm-years (Panel B), there are greater discontinuities in the first intervals to the right of zero. For instance, the number of observations in the first interval next to zero on the right is 8,213, while the number of observations in the second positive interval (4,441) is significantly under-represented (τ_{+2}= -14.96, *p*-value=0.00). Moreover, the number of observations in this interval (small profits) in non-tax aggressive firms (8,213) is more than double than the number of observations in the same interval in tax-aggressive firms (3,893). These findings suggest that most firms that report small profits are non-tax aggressive: either because financial reporting decisions predominate over tax aggressive ones, or because in these firm-years, tax expenditure, being close to zero, has already been minimized (e.g. Coppens and Peek, 2005; Goncharov and Zimmermann, 2006, Marques et al., 2011), and the firms consequently do not need to implement non-conforming tax avoidance practices.

[INSERT FIGURE 2]

When we examine the empirical distribution of net income change for tax aggressive and non-aggressive firm-years (see Figure 3) we observe that both distributions are similar. Just as in the full sample, in the two sub-samples identified by tax reporting aggressiveness, we only find significant discontinuities in the adjacent intervals to (-1.00, 0.00] on the left and [0.00, 0.01) on the right. However, the number of observations in these intervals is much higher in non-tax aggressive firms (6,412 and 6,087, respectively) than in tax-aggressive firms (4,024 and 4,337, respectively). These very preliminary findings may suggest less tax aggressiveness in those settings where firms have financial reporting incentives to engage in upward earnings management.

[INSERT FIGURE 3]

4.4. Tax avoidance and earnings management

In this section, we examine the relationship between earnings management and tax aggressiveness. First, we start with an exploratory analysis and after that we implement a regression analysis.

4.4.1. Exploratory analysis

Table 5 reports the mean values of our proxies for earnings management and tax avoidance in settings with different financial reporting incentives. In Panel A, $SUSPECT_{1,}$ $SUSPECT_{2,}$ and $SUSPECT_3$ are three different dummy variables that take value 1 in a specific setting of suspect firms, and zero in the rest of the sample. These suspect intervals are, respectively: firm-years reporting small profits (1), smoothing net income (2), and suffering financing constraints (3). In Panel B, we calculate a new variable, $SUSPECT_{1+2+3}$, as the sum of the previous dummy variables to identify SMEs with different levels of incentives to report higher earnings. $SUSPECT_{1+2+3}$ is equal to 3 if the firm simultaneously beats zero earnings ($SUSPECT_1$=1), achieves a stable income from year to year ($SUSPECT_2$ = 1), and is under financing constraints ($SUSPECT_3$=1). $SUSPECT_{1+2+3}$ takes value 2 and 1, respectively, if the firm is identified in two and one out of the three settings of suspect firms. And $SUSPECT_{1+2+3}$ takes value 0 if the firm is not included in any of the three suspect settings (i.e. simultaneously $SUSPECT_1$=0, $SUSPECT_2$= 0, and $SUSPECT_3$=0). Thus, the higher the value of $SUSPECT_{1+2+3}$, the higher the financial reporting incentives to engage in upward earnings management.

Panel A of Table 5 shows that suspect firms exhibit higher earnings management and lower tax avoidance than non-suspect firms. The difference of means between suspect and non-suspect firm-years is significant in all cases regardless the earnings management measure considered and is also significant for tax avoidance. In addition, we find that suspect firms seem to manage their earnings upwards (i.e. proxies for earnings management take positive values) and are non-tax aggressive (i.e. in general *TAXDIF* takes negative values), whereas non-suspect firms show income-decreasing earnings management and tax aggressiveness. In panel B we see that in the setting where there are no financial reporting incentives to engage in upward earnings management ($SUSPECT_{1+2+3}$=0), the earnings management variables show their lowest values, being negative and indicating income-decreasing earnings management. In contrast, in this scenario tax avoidance reaches its highest value, indicating a tax aggressive behaviour. As we pass from the setting where $SUSPECT_{1+2+3}$=0 to those with more financial reporting incentives to engage in upward earnings management ($SUSPECT_{1+2+3}$=1, 2, and 3, respectively), the values of earnings management measures increase and those of the proxy for tax avoidance decrease. Thus, where $SUSPECT_{1+2+3}$=3, we find the highest values for most earnings management variables, indicating income-increasing behaviour,

and the lowest one for tax avoidance. In fact, firms that are subjected to at least two financial reporting incentives are non-tax aggressive. We also find that the difference of means in earnings management and tax avoidance between suspect ($SUSPECT_{1+2+3}$=1, 2, or 3) and non-suspect ($SUSPECT_{1+2+3}$=0) firm-years is always significant.

[INSERT TABLE 5]

4.4.2. Regression analysis

Table 6 reports the regression results of tax avoidance on earnings management and financial reporting incentives settings using both *TAXDIF* and *TAXDIF3y* as dependent variables. As in previous research for listed firms, we first use signed discretionary accruals as a proxy for accrual earnings management. Columns (1) and (5) of Table 5 report the estimation of the regression model of our tax avoidance proxies against discretionary accruals and control variables. The coefficients on *DACC* are negative and significant at the 5% and 1% level, respectively, consistent with a negative relation between upward accruals-based earnings management and tax reporting aggressiveness, which implies a rejection of the null-hypothesis H3. This negative relationship suggests that, in general, when SMEs adopt income-increasing practices of accrual earnings management, they are less tax aggressive. Therefore, these findings from an SME sample are opposite to the evidence provided by Wilson (2009) and Frank et al. (2009) for listed firms, who find a positive association of aggressive financial reporting with tax shelter and tax aggressiveness, respectively.

[INSERT TABLE 6]

Once we have found a negative association between discretionary accruals and tax avoidance in general, we focus on those suspect intervals where we have identified strong financial reporting aggressiveness. Columns (2) and (6) of Table 6 present the results from the estimations of model (7), which includes as independent variables those settings that identify the firm-years suspected of income-increasing earnings management: firm-years reporting small profits ($SUSPECT_1$), smoothing net income ($SUSPECT_2$), and suffering financing constraints ($SUSPECT_3$). As reported in Section 4.2, note that these suspect firm-years show higher levels of accrual-based and real activities-based earnings management than the other firm-years. For the two estimations reported in columns (2) and (6) we find that the coefficients on *DACC* are still significantly negative. We also

find that the coefficients on the three $SUSPECT_i$ variables are negative and significant, at the 1% level in 5 out of 6 cases, and at the 5% for $SUSPECT_2$ in column (2). Our findings suggest that SMEs are less tax aggressive in those settings where they have incentives to engage in income-increasing earnings management to reach earnings targets (small profits or stable net income) or because of financing constraints. Therefore, we reject our null-hypothesis H4. These findings are consistent with prior research that documents that tax strategies are conditioned by financial accounting incentives (Graham et al., 2014).

As established in previous literature, proxies for real earnings management have a clear meaning in those settings where there are incentives to engage in income-increasing earnings management. Nevertheless, outside these intervals the deviations from the normal levels of operating activities may be driven by economic factors associated to the firm other than earnings management. That is why we did not include real earnings management measures in model (7), besides that, according to prior empirical research, the $SUSPECT_i$ variables already identify firms that are likely to engage in real earnings management. Nevertheless, keeping in mind the noisy interpretation of proxies for real earnings management in settings where managers do not have strong incentives to manage earnings, columns (3) and (7) report the results when we add the aggregate measure of real earnings management (*REM*) in model (7). The coefficient on *REM* is negative and significant in the *TAXDIF3y* model and non-significant in the *TAXDIFY* model. Therefore, the coefficient and significance of *REM* in the *TAXDIF3Y* regression is consistent with a negative relation between upward real earnings management and tax reporting aggressiveness in SMEs. Nevertheless, we are cautious about this interpretation based on the previous comments. Finally, in columns (4) and (8), we also estimate model (7) including the variable $SUSPECT_{1+2+3}$ instead of the three suspect variables corresponding to each interval of financial reporting incentives. We can observe that $SUSPECT_{1+2+3}$ is highly significant (at 1% in both estimates), indicating that the higher the reporting incentives of SMEs to engage in upward earnings management, the lower the tax aggressiveness[13].

Regarding control variables, we find, in general, that *SIZE*, *ROA* and *BNK* show a positive and significant association with *TAXDIF*, whereas *GROW* and *CASH* are negatively related to *TAXDIF*. Consequently, firms with more aggressive tax reporting are larger, more profitable, and have higher bank debt, whereas, on the other hand, they have lower growth and cash holdings.

We also run model (7) considering *ETR* and long-term *ETR* (*ETR3y*) as proxies for tax avoidance. These measures have been widely employed in prior studies as measures of aggressive tax planning through permanent book-tax differences. The results obtained (not tabulated for the sake of brevity) confirm the above findings. We find that coefficients on *DACC* are positive and significant at the conventional levels, which means that those firm-years with more aggressive financial reporting present higher *ETR* (less tax aggressiveness). We also find that the coefficients on the three dummy variables used to identify firm-years with more incentives to manipulate earnings upwards ($SUSPECT_i$) and on the variable $SUSPECT_{1+2+3}$ are positive and statistically significant, which suggests that SMEs are less tax aggressive in those settings where they have incentives to employ more aggressive financial reporting.

Finally, although in the hypotheses development we assumed that the tax avoidance practices may be affected by earnings management practices, prior studies are not certain about the direction of the causal relationship between financial and tax reporting aggressiveness (e.g. Frank et al., 2009). To check this point, we also run the OLS regressions of our proxy for accrual-based earnings management *(DACC*) on our measures of tax avoidance (*TAXDIF*, *TAXDIF3y*) and usual controls.[14] The not tabulated results show that the coefficients on *TAXDIF* and *TAXDIF3y* are significantly negative, consistent with a negative relation between financial and tax reporting aggressiveness. Therefore, our findings for SMEs work in contrary to those reported by Frank et al. (2009) for US listed firms, who find a positive relationship between aggressive financial reporting and tax aggressiveness.

4.5 Additional analysis

To shed more light on the relationship between tax avoidance and earnings management practices, we implement an alternative analysis similar to that proposed by Phillips, Pincus and Rego (2003) to examine the usefulness of deferred tax expenses in detecting earnings management activities to meet three earnings targets: zero earnings, earnings' increase and analysts' forecasts. In particular, we conduct probit regressions where the dependent variables are our proxies for our firm-years suspected of earnings management practices in order to reach small profits, stable earnings, or increase profits in situations of financing constraints ($SUSPECT_n$)[15]. As independent variables we include proxies for

non-conforming tax avoidance, earnings management, and control variables. We run the following probit regression model:

$$SUSPECT_n = \beta_0 + \beta_1 TAXDIF + \beta_2 EM + \beta_3 SIZE + \beta_4 GROW + \beta_5 LEV + \sum_t \beta_t Year + \sum_j \beta_j Industry + \varepsilon, \quad (8)$$

where *TAXDIF* is our proxy for non-conforming tax avoidance, and *EM* is either our proxy for accrual-based earnings management, *DACC*, or our aggregated measure of real earnings management, *REM*. We control for firm size (*SIZE*), growth (*GROW*), leverage (*LEV*), as well as industry and temporal effects. Table 7 reports the results obtained from the estimation of models considering accrual-based earnings management (Panel A) and real earnings management (Panel B).

[INSERT TABLE 7]

Regardless of the settings of the suspect firms considered, the coefficients on *TAXDIF* are significantly negative, which confirms that less tax aggressive firms are those more likely to meet earnings targets or to suffer financing constraints. We also obtain similar results if we use *TAXDIF3y* as a proxy for tax avoidance. Regarding earnings management practices, the coefficients on *DACC* and *REM* are positive and highly significant in all estimations, suggesting that those firms with higher levels of income-increasing earnings management are more likely to report small profits, stable earnings or suffer financing constraints. In sum, the results from this analysis are also consistent with the argument that financial reporting goals prevail over tax avoidance in those settings where it is assumed that firms manage their earnings to meet earnings targets or to report a better firm performance to improve their access to financing funds.

5. Conclusions

The literature on earnings management practices and their association with tax avoidance has focused on the context of listed firms whose incentives are different from those of SMEs in terms of capital market pressure, agency conflicts and costs and benefits of tax avoidance. In this paper we study earnings management and tax aggressiveness in SMEs to shed light on how financial reporting incentives influence SMEs' decision-making regarding earnings management and tax avoidance.

First, we analyse the distribution of earnings and earnings change in SMEs. We find a significant discontinuity around zero earnings, but not around zero earnings change. We also find that SMEs engage in accrual and real earnings management to beat zero earnings, to achieve a stable income from year to year and when under financial constraints. These findings suggest that reporting a positive income or a higher income under situations of financial distress is as relevant in SMEs as it is in public firms but that, in contrast, SMEs do not suffer the continuous valuation pressure of listed firms to beat last year's earnings. We do find that the target pursued by SMEs is just a stable income above or below last year's earnings, and to achieve this objective they use accrual-based and real earnings management.

Regarding the association between earnings management and tax aggressiveness in SMEs, our preliminary results suggest that when SMEs are not under the pressure to report higher earnings, they may engage in income-decreasing earnings management and tax aggressiveness to reduce taxes paid. Secondly, we find a negative association between income-increasing earnings management and non-conforming tax avoidance, which confirms that SMEs are less tax aggressive when they are more aggressive with regard to financial reporting. We also find that in those settings where we have previously found that SMEs engage in upward earnings management to beat or meet earnings targets and to improve firm performance under financial restrictions, SMEs are less tax aggressive. Therefore, our findings suggest that when SMEs have strong incentives to engage in upward earnings management, these financial reporting incentives prevail over tax aggressiveness.

References

Allee, K.D., & Yohn, T.L. (2009). The demand for financial statements in an unregulated environment: An examination of the production and use of financial statements by privately held small business. *The Accounting Review*, 84, 1-25.

Badertscher, B.A., Katz, S.P., & Rego, S.O. (2013). The separation of ownership and control and corporate tax avoidance. *Journal of Accounting and Economics*, 56, 228-250.

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

Beatty, A., & Harris, D.G. (1998). The effect of taxes, agency costs and information asymmetry on earnings management: a comparison of public and private firms. *Review of Accounting Studies*, 3, 299-326.

Beatty, A.L, Ke, B., & Petroni, K.R. (2002). Earnings management to avoid earnings declines across publicly and privately held banks. *The Accounting Review*, 77, 547-570.

Behr, P., Norden, L., & Noth, F. (2013). Financial constraints of private firms and bank lending behavior. *Journal of Banking and Finance*, 37, 3472-3485.

Berger, A.N., & Udell, G.F. (2006). A more complete conceptual framework for SME finance. *Journal of Banking & Finance*, 30, 2945-2966.

Bhattacharya, U., Daouk, H., & Welker, M. (2003). The world pricing of earnings opacity. *The Accounting Review*, 78, 641–78.

Bonacchi, M., Marra, A., & Zarowin, P. (2019). Organizational structure and earnings quality of private and public firms. *Review of Accounting Studies*, 24, 1066-1113.

Bowen, R., DuCharme, L., & Shores, D. (1995). Stakeholders' implicit claims and accounting method choice. *Journal of Accounting and Economics,* 20, 255-295.

Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics,* 24, 99-126.

Burgstahler, D., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: earnings management in European private and public firms. *The Accounting Review*, 81, 983–1,016.

Campa, C., & Camacho-Miñano, M.M. (2015). The impact of SME's pre-bankruptcy financial distress on earnings management tools. *International Review of Financial Analysis*, 42, 222-234.

Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics*, 95, 41-61.

Cloyd, C.B, Pratt, J., & Stock, T. (1996). The use of financial accounting choice to support aggressive tax positions: public and private firms. *Journal of Accounting Research*, 34, 23-43.

Cohen, D.A., & Zarowin, P. (2010). Accrual-based and real earnings management activities around seasoned equity offerings. *Journal of Accounting and Economics*, 50, 2–19.

Cook, K.A., Moser, W.J., & Omer, T.C. (2017). Tax avoidance and *ex ante* cost of capital. *Journal of Business Finance & Accounting*, 44, 1109-1136.

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

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

Dechow, P.M., Richardson, S.A., & Tuna, I. (2003). Why are earnings kinky? *Review of Accounting Studies*, 8, 355-384.

Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *Journal of Business*, 72, 1-33.

Desai, M.A., & Dharmapala, D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics*, 79, 145-179.

Dyreng, S.D., Hanlon, M., & Maydew, E.L. (2008). Long-run corporate tax avoidance. *The Accounting Review*, 83, 61-82.

Dyreng, S.D., Hanlon, M., Maydew, E.L., & Thornock, J.R. (2017). Changes in corporate effective tax rates over the past 25 years. *Journal of Financial Economics*, 124, 441-463.

Edwards, A., Schwab, C., & Shevlin, T. (2016). Financial constraints and cash tax savings. *The Accounting Review*, 91, 859-881.

Erickson, M., Hanlon, M., & Maydew, E. (2004). How much will firms pay for earnings that do not exist? Evidence of taxes paid on allegedly fraudulent earnings. *The Accounting Review*, 79, 387-408.

European Central Bank (2018). *Survey on the access to finance of enterprises in the euro area. October 2017 to March 2018*. Available at: https://www.ecb.europa.eu.

European Commission (2015). *SME taxation in Europe. An empirical study of applied corporate income taxation for SMEs compared to large enterprises*. DG for

International Market, Industry, Entrepreneurship and SMEs, CIP Programme 186/PP/ENT/CIP/12/F/S01C24.

European Commission Recommendation 361/2003/, 6 May 2003.

European Commission Regulation 651/2014, 17 June 2014.

Frank, M.M., Lynch, L.J., & Rego, S.O. (2009). Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review*, 84, 467-496.

Ge, W., & Kim, J.B. (2014). Real earnings management and the cost of new corporate bonds. *Journal of Business Research*, 67, 641-647.

Givloy, D., Hayn, C.K., & Katz, S.P. (2010). Does public ownership of equity improve earnings quality? *The Accounting Review*, 85, 195-225.

Goncharov, I., & Zimmermann, J. (2006). Earnings management when incentives compete: the role of tax accounting in Russia. *Journal of International Accounting Research*, 5, 41-65.

Graham, J.R., Hanlon, M., Shevlin, T., & Shroff, N. (2014). Incentives for tax planning and avoidance: evidence from the field. *The Accounting Review*, 89, 991-1023.

Graham, J.R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40, 3-73.

Gunny, K.A. (2010). The relation between earnings management using real activities manipulation and future performance: evidence from meeting earnings benchmarks. *Contemporary Accounting Research*, 27, 855–888.

Haga, J., Höglund, H., & Sundvik, D. (2018). Stock market listing status and real earnings management. *Journal of Accounting and Public Policy*, 37, 420-435.

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, 50, 127-178.

Hayn, C. (1995). The information content of losses. *Journal of Accounting and Economics*, 20, 125-153.

Herrmann D., & Inoue T. (1996). Income smoothing and incentives by operating condition: an empirical test using depreciation changes in Japan. *Journal of International Accounting, Auditing & Taxation*, 5, 161-177.

Hope, O.K., Thomas, W.B., & Vyas, D. (2013). Financial reporting quality of U.S. private and public firms. *The Accounting Review*, 88, 1715-1742.

Jacob, J., & Jorgensen, B. (2007). Earnings management and accounting income aggregation. *Journal of Accounting and Economics*, 43, 369-390.

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

Kaplan, S., & Zingales, L. (1997). Do investment-cash flow sensitivities provide useful measures of financial constraints? *Quarterly Journal of Economics*, 112, 169-215.

Khan, M.N., Srinivasan, S., & Tan, L. (2017). Institutional ownership and corporate tax avoidance: new evidence. *The Accounting Review*, 92, 101-122.

Kim, Y., Park, M.S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *The Accounting Review*, 87, 761-796.

Koester, A., Shevlin, T., & Wangerin, D. (2017). The role of managerial ability in corporate tax avoidance. *Management Science*, 63, 3285-3310.

Law, K.K.F., & Mills, L.F. (2015). Taxes and financial constraints: evidence from linguistic cues. *Journal of Accounting Research*, 53, 777-819.

Lennox, C., Lisowsky, P., & Pittman, J. (2013). Tax aggressiveness and accounting fraud. *Journal of Accounting Research*, 51, 739-778.

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

Lisowsky, P. (2010). Seeking shelter: empirically modeling tax shelters using financial statement information. *The Accounting Review*, 85, 1693-1720.

Maingot, M., & Zeghal, D. (2006). Financial reporting of small business entities in Canada. *Journal of Small Business Management*, 44, 513-530.

Marques, M., Rodrigues, L.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.F., & Newberry, K.J. (2001). The influence of tax and nontax costs on book-tax reporting differences: public and private firms. *The Journal of the American Taxation Association,* 23, 1-19.

Moreira, J.A.C. (2006). Are financing needs a constraint to earnings management? Evidence for private Portuguese firms. DP 2006-10, Research Center on Industrial, Labour and Managerial Economics, Universidade do Porto.

Mulier, K., Schoors, K., & Merlevede, B. (2016). Investment-cash flow sensitivity and financial constraints: evidence from unquoted European SMEs. *Journal of Banking and Finance*, 73, 182-197.

OECD (2015). *Taxation of SMEs in OECD and G20 Countries*. OECD Tax Policy Studies, No. 23, OECD Publishing, Paris.

Petersen, M.A. (2009). Estimating standard errors in finance panel data sets: comparing approaches. *The Review of Financial Studies*, 22, 1, 435-480.

Phillips, J., Pincus, M., & Rego, S.O. (2003). Earnings management: new evidence based on deferred tax expense. *The Accounting Review*, 78, 491-521.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42, 335–370.

Scholes, M.S., Wilson, G.P., & Wolfson, M.A. (1992). Firms' responses to anticipated reductions in tax rates: the Tax Reform Act of 1986. *Journal of Accounting Research*, 30, 161-185.

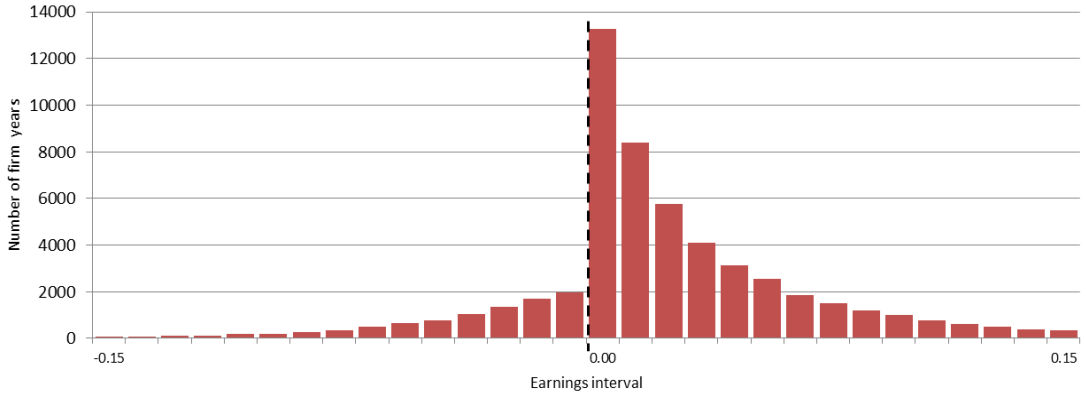
Shackelford, D.A., & Shevlin, T. (2001). Empirical tax research in accounting. *Journal of Accounting and Economics*, 31, 321-387.

Spanish Department of Industry - *Dirección General de Industria y de la Pequeña y Mediana Empresa* (2015). *Retrato de las pyme 2015*. Ministerio de Industria, Energía y Turismo. Available at: www.ipyme.org

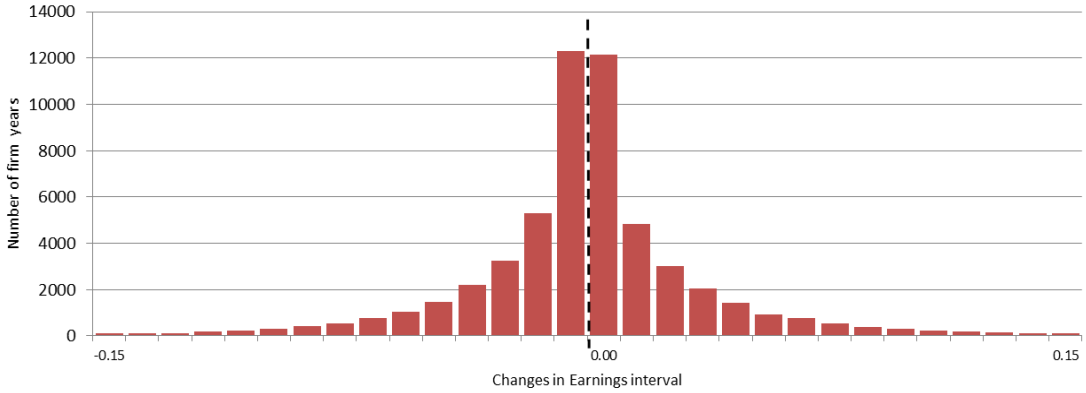
Wilson, R.J. (2009). An examination of corporate tax shelter participants. *The Accounting Review*, 84, 969-999.

Figure 1. Empirical distribution of net income and net income change

Panel A. Annual net income scaled by lagged total assets



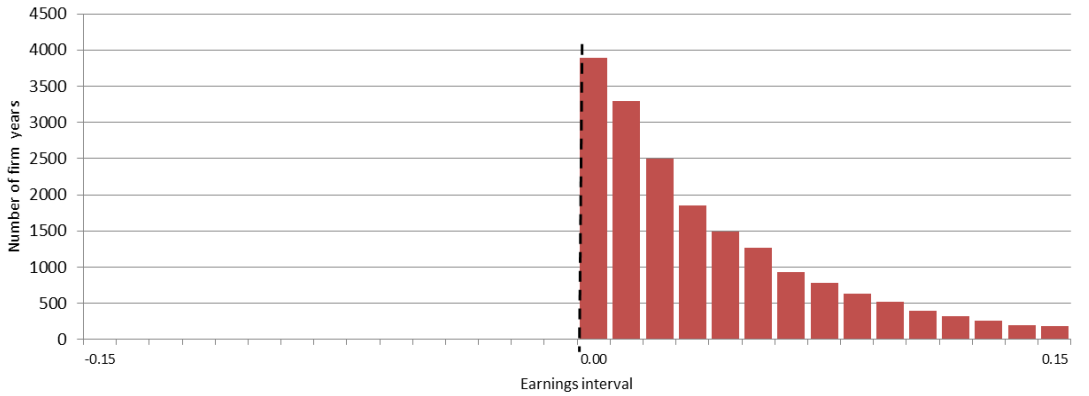
Panel B. Change in annual net income scaled by lagged total assets



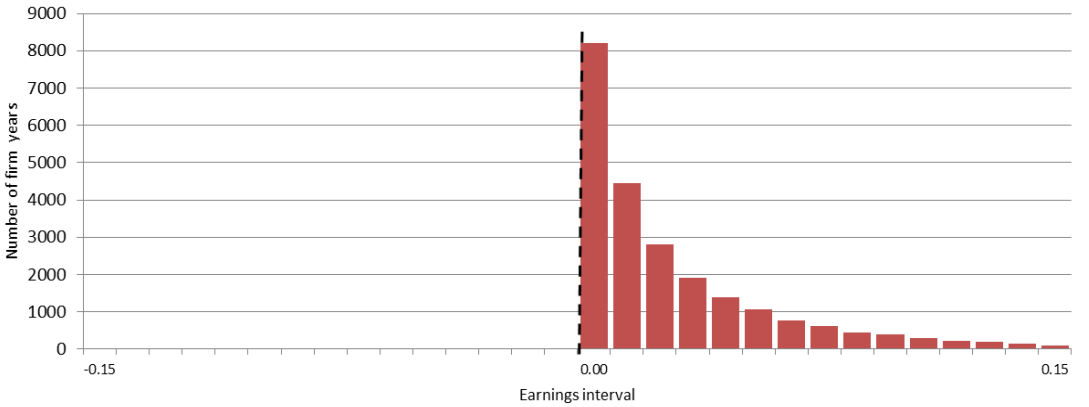
Notes: The distribution interval widths are 0.01 and the location of zero on the horizontal axis is marked by the dashed line. The histogram is truncated at the 15th intervals on both sides of zero.

Figure 2. Empirical distribution of annual net income by tax-aggressiveness

Panel A. Tax aggressive firm-years



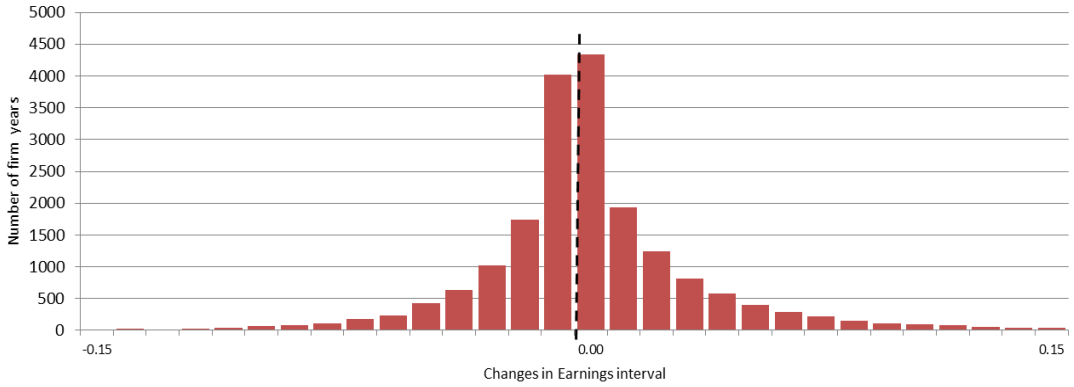
Panel B. Non-tax aggresive firm-years



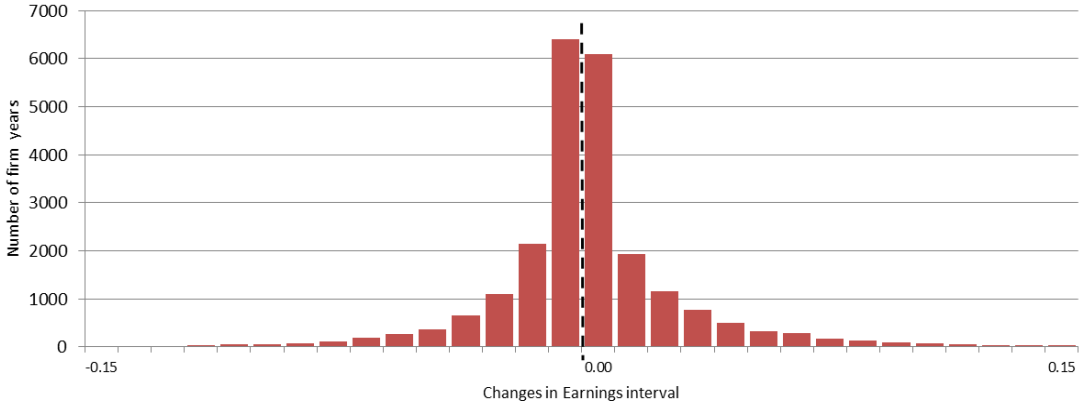
Notes: The distribution interval widths are 0.01 and the location of zero on the horizontal axis is marked by the dashed line. The histogram is truncated at the 15th intervals on both sides of zero.

Figure 3. Empirical distribution of annual net income change by tax aggressiveness

Panel A. Tax aggresive firm-years



Panel B. Non-tax aggresive firm-years



Notes: The distribution interval widths are 0.01 and the location of zero on the horizontal axis is marked by the dashed line. The histogram is truncated at the 15th intervals on both sides of zero.

Table 1. Descriptive statistics

Panel A: Firm characteristics and earnings management measures

	#obs.	Mean	SD	10th perc.	Median	90th perc.
SIZE	51,558	8.7233	0.8557	7.5194	8.7447	9.9055
ROA	51,558	0.0221	0.0497	-0.0222	0.0157	0.0784
LEV	51,558	0.5490	0.2032	0.2633	0.5612	0.8113
BNK	49,418	0.2705	0.1769	0.0477	0.2514	0.5165
TANG	51,558	0.2951	0.2012	0.0593	0.2602	0.5866
GROW	51,558	1.0079	0.1893	0.7893	1.0040	1.2153
CASH	51,558	0.1786	0.1841	0.0165	0.1144	0.4367
KZ	51,558	11.2542	19.0204	1.2673	5.3246	25.4022
DACC	51,558	-0.0037	0.1106	-0.1389	-0.0022	0.1289
ACFO	51,558	-0.0020	0.1238	-0.1567	0.0030	0.1435
APROD	51,558	0.0018	0.1946	-0.2349	0.0168	0.2191
ADISEXP	51,558	0.0017	0.1046	-0.1238	0.0178	0.1051
REM	51,558	0.0014	0.3074	-0.3837	0.0321	0.3431

Panel B: Tax avoidance measures

	#obs.	Mean	SD	10th perc.	Median	90th perc.
TAXDIF	42,761	0.0053	0.1168	-0.0759	0.0000	0.1452
TAXDIF3y	27,965	0.0103	0.0820	-0.0615	0.0000	0.1010
ETR	42,761	0.2589	0.1144	0.1267	0.2615	0.3395
ETR3y	27,965	0.2568	0.0822	0.1552	0.2668	0.3298

Notes: *SIZE* is the natural logarithm of net sales. *ROA* is operating income divided by total assets. *CASH* is cash holdings divided by total assets. *LEV* is the total debt over total assets. *BNK* is the ratio of bank debt to total debt. *TANG* is the ratio of net equipment and gross plants to total assets. *GROW* is net sales divided by lagged net sales. *CASH* is cash holdings divided by total assets. *KZ* is Kaplan and Zingales index. *DACC* is the value of signed discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995). *ACFO* is the abnormal level of cash flows according to model (4) multiplied by (-1); *APROD* is abnormal production costs according to model (5); *ADISEXP* is abnormal discretionary expenses according to model (6) multiplied by (-1); *REM* is an aggregate measure of real earnings management defined as *ACFO+APROD+ADISEXP*. *TAXDIF* is the difference between the statutory tax rate that corresponds to this firm-year according to the tax legislation and its ETR. *ETR* is total effective tax rate, defined as tax expense over pre-tax income. *TAXDIF3y* and *ETR3y* are long-run TAXDIF and ETR, respectively, considering an average of three consecutive years.

Table 2. Suspect firm-years (small profits) and earnings management

Panel A: Firms with small profits vs the rest of firms

	DACC	*ACFO*	*APROD*	*ADISEXP*	*REM*
$SUSPECT_{1a}$	0.015***	0.015***	0.023***	0.015***	0.052***
	(13.47)	(12.94)	(8.53)	(10.04)	(12.93)
SIZE	-0.004***	0.006***	0.018***	-0.002**	0.022***
	(-7.61)	(10.11)	(9.02)	(-2.25)	(7.14)
GROW	0.069***	0.064***	0.039***	-0.122***	-0.019**
	(19.76)	(17.98)	(7.52)	(-39.58)	(-2.27)
ROA	0.178***	-1.055***	-0.875***	0.115***	-1.815***
	(15.39)	(-84.26)	(-27.70)	(6.43)	(-37.13)
Intercept	-0.042***	-0.077***	-0.181***	0.149***	-0.109***
	(-6.14)	(-10.43)	(-8.86)	(13.17)	(-3.48)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.032	0.174	0.054	0.048	0.099
#obs.	51,558	51,558	51,558	51,558	51,558

Panel B: Firms with small profits vs small losses

	DACC	*ACFO*	*APROD*	*ADISEXP*	*REM*
$SUSPECT_{1b}$	0.013***	0.013***	0.013*	0.011***	0.038***
	(3.52)	(3.49)	(1.72)	(2.71)	(3.23)
SIZE	-0.008***	0.005***	0.013***	-0.004***	0.013***
	(-7.61)	(4.30)	(4.52)	(-2.79)	(3.13)
GROW	0.061***	0.055***	0.049***	-0.121***	-0.018
	(9.91)	(8.74)	(5.06)	(-21.21)	(-1.20)
ROA	-0.203	-1.328***	-1.421**	-0.366	-3.115***
	(-0.68)	(-4.29)	(-2.25)	(-1.07)	(-3.26)
Intercept	-0.006	-0.056***	-0.151***	0.166***	-0.040
	(-0.47)	(-4.01)	(-4.54)	(9.47)	(-0.81)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.0240	0.0184	0.0136	0.0517	0.0084
#obs.	14,012	14,012	14,012	14,012	14,012

Notes: This table reports OLS coefficients of the following regression model:

$$EM = \beta_0 + \beta_1 SUSPECT_n + \beta_2 SIZE + \beta_3 GROW + \beta_4 ROA + \sum_t \beta_t Year + \sum_j \beta_j Ind + \varepsilon$$

EM refers to each of our proxies of earnings management: *DACC* is the value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995). *ACFO* is the abnormal level of cash flows according to model (4) multiplied by (-1); *APROD* is abnormal production costs according to model (5); *ADISEXP* is abnormal discretionary expenses according to model (6) multiplied by (-1); *REM* is an aggregate measure of real earnings management defined as *ACFO+APROD+ADISEXP*. In Panel A, $SUSPECT_{1a}$ is a dummy variable equal to 1 if net income divided by total assets between *t*-1 and *t* is greater than or equal to 0 but less than 0.01, zero otherwise. In Panel B, $SUSPECT_{1b}$ is a dummy variable equal to 1 if net income divided by total assets between *t*-1 and *t* is greater than or equal to 0 but less than 0.01, zero if net income divided by total assets between *t*-1 and *t* is greater than or equal to -0.01 but less than 0. *SIZE* is the natural logarithm of net sales. *GROW* is net sales divided by lagged net sales. *ROA* is operating income divided by total assets. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the firm level in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% (two-tailed) level, respectively.

Table 3. Suspect firm-years (small earnings increases and decreases) and earnings management

Panel A: Firms with small earnings increases vs the rest of firms					
	DACC	*ACFO*	*APROD*	*ADISEXP*	*REM*
$SUSPECT_{2a}$	0.002*	0.002	0.031***	0.008***	0.041***
	(1.72)	(1.56)	(13.80)	(6.86)	(12.02)
SIZE	-0.005***	0.005***	0.017***	-0.003***	0.020***
	(-8.81)	(8.98)	(8.57)	(-2.85)	(6.39)
GROW	0.068***	0.063***	0.031***	-0.124***	-0.029***
	(19.44)	(17.70)	(6.01)	(-39.96)	(-3.53)
ROA	0.157***	-1.075***	-0.893***	0.097***	-1.871***
	(13.64)	(-85.85)	(-28.13)	(5.42)	(-37.96)
Intercept	-0.033***	-0.068***	-0.167***	0.158***	-0.077**
	(-4.87)	(-9.26)	(-8.19)	(13.94)	(-2.45)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.029	0.171	0.056	0.046	0.097
#obs.	51,558	51,558	51,558	51,558	51,558
Panel B: Firms with small earnings decreases vs the rest of firms					
	DACC	*ACFO*	*APROD*	*ADISEXP*	*REM*
$SUSPECT_{2b}$	0.012***	0.012***	0.023***	0.011***	0.046***
	(10.76)	(10.32)	(10.42)	(9.52)	(13.78)
SIZE	-0.005***	0.006***	0.017***	-0.003***	0.020***
	(-8.51)	(9.32)	(8.72)	(-2.70)	(6.61)
GROW	0.070***	0.065***	0.042***	-0.121***	-0.013
	(20.12)	(18.34)	(8.03)	(-39.08)	(-1.60)
ROA	0.162***	-1.071***	-0.899***	0.098***	-1.871***
	(14.09)	(-85.95)	(-28.29)	(5.49)	(-38.05)
Intercept	-0.039***	-0.074***	-0.178***	0.153***	-0.099***
	(-5.67)	(-9.99)	(-8.74)	(13.46)	(-3.16)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.031	0.173	0.050	0.047	0.098
#obs.	51,558	51,558	51,558	51,558	51,558

Notes: This table reports OLS coefficients of the following regression model:

$$EM = \beta_0 + \beta_1 SUSPECT_n + \beta_2 SIZE + \beta_3 GROW + \beta_4 ROA + \sum_t \beta_t Year + \sum_j \beta_j Ind + \varepsilon$$

EM refers to each of our proxies of earnings management: *DACC* is the value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995). *ACFO* is the abnormal level of cash flows according to model (4) multiplied by (-1); *APROD* is abnormal production costs according to model (5); *ADISEXP* is abnormal discretionary expenses according to model (6) multiplied by (-1); *REM* is an aggregate measure of real earnings management defined as *ACFO+APROD+ADISEXP.* In Panel A, $SUSPECT_{2a}$ is a dummy variable equal to 1 if the change in net income divided by total assets between *t*-1 and *t* is greater than or equal to 0 but less than 0.01, zero otherwise. In Panel B, $SUSPECT_{2b}$ is a dummy variable equal to 1 if the change in net income divided by total assets between *t*-1 and *t* is greater than or equal to -0.01 but less than 0, zero otherwise. *SIZE* is the natural logarithm of net sales. *GROW* is net sales divided by lagged net sales. *ROA* is operating income divided by total assets. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the firm level in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% (two-tailed) level, respectively.

Table 4. Suspect firm-years (financially constrained) and earnings management

Panel A: Financially constrained firms vs the rest of firms. Kaplan and Zingales index

	DACC	*ACFO*	*APROD*	*ADISEXP*	*REM*
$SUSPECT_3$	0.024***	0.046***	0.024***	0.007***	0.077***
	(21.87)	(42.03)	(7.07)	(3.76)	(15.45)
SIZE	-0.007***	0.002***	0.015***	-0.004***	0.014***
	(-11.60)	(3.64)	(7.67)	(-3.27)	(4.58)
GROW	0.064***	0.056***	0.035***	-0.123***	-0.033***
	(18.62)	(15.95)	(6.66)	(-39.84)	(-3.96)
ROA	0.180***	-1.031***	-0.885***	0.100***	-1.816***
	(15.60)	(-84.50)	(-27.67)	(5.52)	(-36.77)
Intercept	-0.023***	-0.047***	-0.156***	0.161***	-0.042
	(-3.29)	(-6.58)	(-7.69)	(14.14)	(-1.36)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.038	0.200	0.055	0.046	0.107
#obs.	51,558	51,558	51,558	51,558	51,558

Panel B: Financially constrained firms vs the rest of firms. Leverage ratio

	DACC	*ACFO*	*APROD*	*ADISEXP*	*REM*
$SUSPECT_4$	0.002**	0.005***	0.010***	0.008***	0.023***
	(2.04)	(4.65)	(2.93)	(4.19)	(4.43)
SIZE	-0.005***	0.005***	0.017***	-0.003***	0.019***
	(-8.96)	(8.64)	(8.33)	(-3.14)	(6.07)
GROW	0.068***	0.062***	0.036***	-0.125***	-0.026***
	(19.41)	(17.41)	(6.83)	(-40.34)	(-3.18)
ROA	0.161***	-1.064***	-0.885***	0.111***	-1.838***
	(13.62)	(-83.02)	(-27.31)	(6.11)	(-36.66)
Intercept	-0.033***	-0.067***	-0.165***	0.160***	-0.072**
	(-4.80)	(-9.11)	(-8.11)	(14.09)	(-2.31)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.029	0.172	0.052	0.046	0.095
#obs.	51,558	51,558	51,558	51,558	51,558

Notes: This table reports OLS coefficients of the following regression model:

$$EM = \beta_0 + \beta_1 SUSPECT_n + \beta_2 SIZE + \beta_3 GROW + \beta_4 ROA + \sum_t \beta_t Year + \sum_j \beta_j Ind + \varepsilon$$

EM refers to each of our proxies of earnings management: *DACC* is the value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995). *ACFO* is the abnormal level of cash flows according to model (4) multiplied by (-1); *APROD* is abnormal production costs according to model (5); *ADISEXP* is abnormal discretionary expenses according to model (6) multiplied by (-1); *REM* is an aggregate measure of real earnings management defined as *ACFO+APROD+ADISEXP.* In Panel A, $SUSPECT_3$ is a dummy variable equal to 1 if the firm-year is in the top tercile of the Kaplan and Zingales index (*KZ*) distribution, zero otherwise. In Panel B, $SUSPECT_4$ is a dummy variable equal to 1 if the firm-year is in the top tercile of the leverage ratio (*LEV*) distribution, zero otherwise. *SIZE* is the natural logarithm of net sales. *GROW* is net sales divided by lagged net sales. *ROA* is operating income divided by total assets. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the firm level in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% (two-tailed) level, respectively.

Table 5. Mean values of earnings management and tax avoidance in different settings

Panel A: Small profits ($Suspect_1$), smoothed net income ($Suspect_2$), financially constrained ($Suspect_3$)

	$SUSPECT_1$		$SUSPECT_2$		$SUSPECT_3$	
	0	1	0	1	0	1
DACC	0.0012	0.0035**	0.0001	0.0036***	-0.0075	0.0193***
ACFO	-0.0261	0.0245***	-0.0291	0.0064***	-0.0325	0.0269***
APROD	-0.0169	0.0304***	-0.0310	0.0254***	-0.0167	0.0212***
ADISEXP	-0.0016	0.0139***	-0.0029	0.0088***	0.0014	0.0054***
REM	-0.0446	0.0688***	-0.0630	0.0405***	-0.0478	0.0535***
TAXDIF	0.0201	-0.0322***	0.0150	-0.0049***	0.0076	0.0011***
#obs.	30,655	12,106	21,901	20,860	27,848	14,913

Panel B: Firms with different levels of reporting incentives ($SUSPECT_{1+2+3}$)

	$SUSPECT_{1+2+3}$=0	$SUSPECT_{1+2+3}$=1	$SUSPECT_{1+2+3}$=2	$SUSPECT_{1+2+3}$=3
DACC	-0.0120	0.0054***	0.0105***	0.0087***
ACFO	-0.0607	-0.0096***	0.0243***	0.0439***
APROD	-0.0474	-0.0064***	0.0314***	0.0611***
ADISEXP	-0.0057	0.0010***	0.0102***	0.0188***
REM	-0.1139	-0.0151***	0.0659***	0.1238***
TAXDIF	0.0253	0.0106***	-0.0129***	-0.0350***
#obs	12,649	15,790	10,877	3,445

Notes: $SUSPECT_1$ is a dummy variable equal to 1 if net income divided by total assets between *t*-1 and *t* is greater than or equal to 0 but less than 0.01, zero otherwise. $SUSPECT_2$ is a dummy variable equal to 1 if the change in net income divided by total assets between *t*-1 and *t* is greater than or equal to -0.01 but less than 0.01, zero otherwise. $SUSPECT_3$ is a dummy variable equal to 1 if the firm-year is in the top tercile of the Kaplan and Zingales index (*KZ*) distribution, zero otherwise. $SUSPECT_{1+2+3}$ is a variable calculated as the sum of $SUSPECT_1$, $SUSPECT_2$, and $SUSPECT_3$. *DACC* is the value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995). *ACFO* is the abnormal level of cash flows according to model (4) multiplied by (-1); *APROD* is abnormal production costs according to model (5); *ADISEXP* is abnormal discretionary expenses according to model (6) multiplied by (-1); *REM* is an aggregate measure of real earnings management defined as *ACFO+APROD+ADISEXP*. *** means that the difference between the means of suspect and non-suspect firm-years is statistically significant at the 1% and 5% level, respectively, according to the Student's *t*- test.

Table 6. Tax avoidance, earnings management and financial reporting incentives

	Dependent variable: TAXDIF				*Dependent variable: TAXDIF3y*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SUSPECT1		-0.040***	-0.040***			-0.019***	-0.019***	
		(-19.92)	(-19.91)			(-10.41)	(-10.39)	
SUSPECT2		-0.003**	-0.003**			-0.004***	-0.004***	
		(-2.31)	(-2.30)			(-3.36)	(-3.15)	
SUSPECT3		-0.010***	-0.010***			-0.009***	-0.009***	
		(-5.13)	(-5.13)			(-4.52)	(-4.51)	
SUSPECT1+2+3				-0.017***				-0.010***
				(-17.25)				(-10.51)
DACC	-0.011**	-0.010**	-0.010*	-0.009*	-0.017***	-0.016***	-0.009*	-0.009*
	(-2.23)	(-2.09)	(-1.76)	(-1.68)	(-4.02)	(-3.78)	(-1.74)	(-1.79)
REM			-0.001	0.001			-0.007**	-0.007**
			(-0.20)	(0.20)			(-2.53)	(-2.38)
SIZE	0.028***	0.025***	0.025***	0.026***	0.023***	0.021***	0.021***	0.022***
	(26.48)	(24.14)	(24.10)	(25.32)	(20.75)	(19.35)	(19.53)	(20.04)
GROW	-0.023***	-0.027***	-0.027***	-0.023***	-0.013***	-0.014***	-0.014***	-0.012***
	(-7.04)	(-8.28)	(-8.29)	(-6.94)	(-4.40)	(-4.67)	(-4.81)	(-3.95)
ROA	0.306***	0.122***	0.121***	0.171***	0.178***	0.078***	0.059***	0.072***
	(15.08)	(6.20)	(5.64)	(7.82)	(8.98)	(3.97)	(2.80)	(3.41)
BNK	0.163***	0.031***	0.031***	0.033***	0.010*	0.021***	0.020***	0.020***
	(3.24)	(6.14)	(6.14)	(6.40)	(1.86)	(3.86)	(3.77)	(3.83)
TANG	0.164***	-0.005	-0.005	-0.014***	0.138***	-0.004	-0.005	-0.006
	(3.55)	(-0.85)	(-0.86)	(-2.85)	(2.79)	(-0.66)	(-0.88)	(-1.26)
CASH	-0.012***	-0.025***	-0.025***	-0.026***	-0.008*	-0.017***	-0.017***	-0.017***
	(-2.77)	(-5.71)	(-5.72)	(-6.01)	(-1.75)	(-3.78)	(-3.86)	(-3.88)
Intercept	-0.235***	-0.184***	-0.184***	-0.194***	-0.187***	-0.156***	-0.156***	-0.162***
	(-20.26)	(-15.64)	(-15.64)	(-16.54)	(-16.23)	(-13.40)	(-13.41)	(-13.95)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.077	0.095	0.095	0.087	0.101	0.111	0.112	0.109
#obs.	41,081	41,081	41,081	41,081	26,822	26,822	26,822	26,822

This table reports OLS coefficients of the following regression model:

$$TAXDIF = \beta_0 + \beta_1 SUSPECT_1 + \beta_2 SUSPECT_2 + \beta_3 SUSPECT_3 + \beta_4 DACC + \beta_5 SIZE + \beta_6 GROW + \beta_7 ROA + \beta_8 BNK + \beta_9 TANG + \beta_{10} CASH + \sum_t \beta_t Year + \sum_j \beta_j Ind + \varepsilon$$

TAXDIF is our proxy for non-conforming tax avoidance, estimated as the difference between the statutory tax rate that corresponds to this firm-year according to the tax legislation and its ETR. We estimated *TAXDIF* using data for a given year (*TAXDIF*) and three consecutive years (*TAXDIF3y*). *SUSPECT1* is a dummy variable equal to 1 if net income divided by total assets between *t*-1 and *t* is greater than or equal to 0 but less than 0.01, zero otherwise. *SUSPECT2* is a dummy variable equal to 1 if the change in net income divided by total assets between *t*-1 and *t* is greater than or equal to -0.01 but less than 0.01, zero otherwise. *SUSPECT3* is a dummy variable equal to 1 if the firm-year is in the top tercile of the Kaplan and Zingales index (*KZ*) distribution, zero otherwise. *SUSPECT1+2+3* is a variable calculated as the sum of *SUSPECT1, SUSPECT2*, and *SUSPECT3. DACC* is the value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995). *REM* is an aggregate measure of real earnings management defined as *ACFO+APROD+ADISEXP. SIZE* is the natural logarithm of total assets. *GROW* is net sales divided by lagged net sales. *ROA* is operating income divided by total assets. *BNK* is the ratio of bank debt to total debt. *TANG* is the ratio of net equipment and gross plants to total assets. *CASH* is cash holdings divided by total assets. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the firm level in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% (two-tailed) level, respectively.

Table 7. Probit model of the likelihood of suspect firm-years

Panel A: Accrual-based earnings management				Panel B: Real earnings management			
	SUSPECT$_1$	*SUSPECT*$_2$	*SUSPECT*$_3$		*SUSPECT*$_1$	*SUSPECT*$_2$	*SUSPECT*$_3$
TAXDIF	-1.705***	-0.455***	-0.314***	*TAXDIF*	-1.661***	-0.406***	-0.269***
	(-20.94)	(-7.46)	(-3.98)		(-20.40)	(-6.67)	(-3.44)
DACC	0.191***	0.148***	1.449***	*REM*	0.669***	0.593***	0.489***
	(3.13)	(2.66)	(23.11)		(20.48)	(24.35)	(13.29)
SIZE	-0.271***	-0.129***	0.180***	*SIZE*	-0.281***	-0.134***	0.169***
	(-20.53)	(-12.70)	(11.33)		(-21.33)	(-13.33)	(10.75)
GROW	-1.217***	-0.438***	0.002	*GROW*	-1.142***	-0.356***	0.159***
	(-26.15)	(-12.22)	(0.05)		(-24.55)	(-9.88)	(3.94)
LEV	1.717***	1.359***	3.068***	*LEV*	1.620***	1.262***	2.960***
	(31.91)	(32.94)	(45.45)		(30.02)	(30.78)	(44.19)
Intercept	1.488***	0.612***	-3.982***	*Intercept*	1.543***	0.640***	-3.967***
	(10.19)	(5.41)	(-23.20)		(10.60)	(5.70)	(-23.34)
Year	Yes	Yes	Yes	*Year*	Yes	Yes	Yes
Ind	Yes	Yes	Yes	*Ind*	Yes	Yes	Yes
Pse. R^2	0.138	0.055	0.195	*Pse.* R^2	0.154	0.069	0.194
#obs.	42,761	42,761	42,761	*#obs.*	42,761	42,761	42,761

Notes: This table reports coefficients of the following probit model:

$$SUSPECT_n = \beta_0 + \beta_1 TAXDIF + \beta_2 EM + \beta_2 SIZE + \beta_3 GROW + \beta_4 LEV + \sum_t \beta_t Year + \sum_j \beta_j Ind + \varepsilon$$

SUSPECT$_1$ is a dummy variable equal to 1 if the net income divided by total assets between *t*-1 and *t* is greater than or equal to 0 but less than 0.01, zero otherwise. *SUSPECT*$_2$ is a dummy variable equal to 1 if the change in net income divided by total assets between *t*-1 and *t* is greater than or equal to -0.01 but less than 0.01, zero otherwise. *SUSPECT*$_3$ is a dummy variable equal to 1 if the firm-year is in the top tercile of the Kaplan and Zingales index (*KZ*) distribution, zero otherwise. *TAXDIF* is our proxy for non-conforming tax avoidance, estimated as the difference between the statutory tax rate that corresponds to this firm-year according to the tax legislation and its ETR. In Panel A, *EM* is *DACC,* which is the value of discretionary accruals estimated by the Jones (1991) model modified by Dechow et al. (1995); and in Panel B, *EM* is *REM,* which is an aggregate measure of real earnings management defined as *ACFO+APROD+ADISEXP*. *SIZE* is the natural logarithm of total assets. *GROW* is net sales divided by lagged net sales. *LEV* is the total debt over total assets. *Year* and *Ind* represent year and industry dummies, respectively. Robust *t*-statistics clustered at the firm level in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% (two-tailed) level, respectively.

[1] Throughout the paper, we use the term aggressive financial reporting in the sense of upwards earnings management, i.e., those accounting and real decisions that managers may adopt to increase reported earnings. Instead, the term financial reporting refers to the release of financial information, usually through the financial statements.

[2] The existing tax legislation during the period 2005-2014 was the consolidated text of the Corporate Tax Act (RD 4/2004), which was replaced by a new Act in 2014 (27/2014), which entered into force in 2015.

[3] The extant research provides mixed evidence on the differences in earnings quality for both types of firms. On one hand, Beatty et al. (2002) and Givloy, Hayn, and Katz (2010) find that accrual quality is lower in public firms and Haga, Höglund, and Sundvik (2018) find that public firms engage more in real earnings management than private firms. On the other hand, other studies conclude that public firms exhibit a higher financial reporting quality, such as Ball and Shivakumar (2005), Burgstahler et al. (2006) and Hope et al. (2013).

[4] Both a legal decision based on tax advantage investments and fraudulent tax planning would imply tax avoidance. See Lisowsky (2010) for the different concepts in relation to tax aggressiveness.

[5] For example, Erickson et al. (2004) find that certain firms accused of fraudulently overstating their earnings paid taxes on overstated financial accounting income to avoid detection.

[6] In addition, since tax avoidance practices are less complex in SMEs than in large firms, the cash flow gained through tax avoidance may be almost free of risk, which should have positive effects for the cost of financing (Cook, Moser, and Omer, 2017).

[7] Small firms do not report taxes paid, which are necessary to calculate Cash ETR.

[8] The normal tax rate for Spanish companies was 35% until 2006, 32.5% in 2007, and 30% from 2008 to 2014. In Basque Country and Navarre, the special tax rate for general companies was 28% in the period 2005-2014. A progressive schedule with a reduced (top) tax rate of 30% (35%) in 2005 and 2006, and 25% (30%) from 2007 to 2014 was applied to Spanish small firms. The special tax rate for small firms was 24% in Basque Country and 23% in Navarre, from 2005 to 2014.

[9] This width of 0.01 is the same used in their analyses by Gunny (2010), Degeorge et al. (1999), and Marques et al. (2011). We check whether our results depend on the interval width used. We repeat the analyses using an interval width of 0.005, as in Roychowdhury (2006) and Coppens and Peek (2005), and the results obtained are similar to those reported.

[10] We calculate a Kaplan and Zingales (1997) index adapted to data available for SMEs, considering sales growth as proxy for Q (e.g. Behr, Norden, and Noth, 2013) and since the information about dividends is not available for most of the firms in our sample, we do not take this dimension into account (e.g. Mulier, Schoors, and Merlevede, 2016).

[11] We find similar results if we compare the firm-year observations in the suspect interval with firm-years observations in the interval [-0.03, 0.03] of scaled net income, which implies the use of a sample of 29,840 observations in the estimation model and discards the possibility that the results are driven by firm-years with extreme performance.

[12] The results are robust to using top quartile, top quintile, median and mean of Kaplan and Zingales index and leverage to define suspect firms with financing constraints.

[13] The results of Table 6 are robust to using top quartile, top quintile, median and mean of Kaplan and Zingales index and leverage to define suspect firms with financing constraints.

[14] We do not run the model regression using real earnings management measures as dependent variables because the interpretation of these measures in settings where managers do not have strong incentives to manage earnings is noisy, given that they may also be driven by economic forces and not by earnings management practices.

[15] The results are robust to using the top quartile, top quintile, median and mean of Kaplan and Zingales index to define $SUSPECT_3$.