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DICHIARA

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The role played by taxation in affecting reporting behaviors

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How does taxation affect financial reporting? The role of institutional and firm-based factors

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1. General overview of the topic, research questions and contribution

1.1. Introduction and research questions

Taxation is a phenomenon that can be analysed under different perspectives. Economics and law have a long history in studying taxes in term of distributional and efficiency effects. Recently, after the influential paper of Scholes et al of the mid '80, accounting also concentrated its attention on the role that taxes have inside organizations. The paradigm developed by Scholes et al merges the perspective of microeconomics and law. It suggests that an effective tax planning by necessity has to consider three relevant issues: the other parties involved in the transaction; all taxes, both implicit and explicit; the costs raised by a tax planning decision. Traditionally the attention has been put on income due to the relevance that it has in accounting research. This paper makes reference to this framework.

To understand how taxes interfere with reporting decisions, it has to be underlined that managers take into consideration the opportunities to reduce taxes during the preparation of financial statements and this implies that the attributes of earnings are affected. This is true especially for corporate taxes, that represent the focus of this paper. Taxes can be reduced by adjusting real operations, by using debts rather than equity to deduct interests or by managing financial reporting items (Bartov; 1993; Keating and Zimmerman; 2000).

Before going on it is important to clarify the meaning of the term 'tax minimization', widely used in what follows, and how it is used in the paper. The reduction of taxes can be reached either by decreasing the level of tax expense or by postponing taxation over time. This second way is represented by the so called temporary differences between book and tax income where a greater deduction is allowed today against its taxation tomorrow. In a time window greater than one year book and tax income coincide and the sum of temporary differences with their reversal is zero. Such differences can become however permanent if every year the new set of costs

to deduct is greater than the ones that are taxed due to their reversal. A second important specification is about the type of tax minimization that is detected in the study. Here the reference is exclusively to tax reductions made through financial statements and measurable using accruals. Operations made “outside” the reporting system are not captured by this study.

Even if tax minimization is a reasonable goal to attain, the literature on tax accounting acknowledge that not all firms behave in this way because other goals, different and sometimes opposite to tax reduction, are more relevant¹ (Shackelford and Shevlin; 2001). So the side effects of tax planning can be such that its benefits are overwhelmed. Given that the reality with this respect is multifaceted, there is the possibility to investigate in conjunction the drivers of tax behaviour that the literature identifies either the specific attitude of the firm (Lopez, Regier, Lee; 1998) or the legal environment (Gramlich; 1991). The analysis is made in the paper through the lenses of reporting conservatism, a feature of earnings that is affected by taxation. Conservatism can be identified in the attitude of early recognize all losses but not profits (Bliss; 1924) and it leads, through the exercise of a degree of caution in preparing financial statements, to a prudent estimation of earnings and assets. This very same attitude is affected by taxation also (Watts; 2003) and this justifies the use of conservatism to study the impact of taxation on financial statements.

In this paper taxation is analysed as both an institutional factor and a firm based attitude. From an institutional point of view, we look at the relationship between book² and tax income and its evolution over time. So the focus is on the degree of overlapping between these two figures of earnings. The recording in income statements of “tax-only”³ items can be allowed or required by tax laws to guarantee

¹ For example, maintain a given level of earnings to not violate debt covenants harms the possibility to engage in income reducing practices to contain taxes.

² For “book income” it is intended the figure of earnings showed in income statement.

³ “Tax only items” refers to those costs and expenses that have not an economic justification in that are quantified for tax purposes only. An example is given by accelerated depreciation that can be deducted even if it does not mirror the real amortization plan.

their effectiveness and to simplify the accounting process. This induces conservatism due to the increase in charged costs and at the same time leads to values far from their economic significance. For this reasons a greater separation between book and taxable income is usually seen as a way to guarantee a fair financial reporting even if this implies a more laborious accounting system that is indeed doubled, one for financial reporting and the other for tax purposes. Our aim, however, is not to say which system is better, but to quantify the impact that each of them has on reporting conservatism, in order to show the role played by tax institutional factors on financial reporting.

The first research question addressed is therefore the following:

Does the level of reporting conservatism vary over time when the relationship between book and tax income change?

With this respect it is worth clarifying that the study makes reference to firms that prepare their financial statements according to the Italian accounting principles, to guarantee the consistency of accounting rules over time. This set of accounting standards has the characteristic to give importance to the principle of prudence at an higher degree as compared to IFRS.

From a firm based perspective the attention is put on firm based tax aggressiveness. Tax aggressiveness is intended as the adoption of accounting policies aimed at reducing the tax burden by using the devices allowed by tax laws (Lopez et al; 1998). Intuitively, such behaviour implies also the assumption of a given degree of risk. Tax reducing policies sometimes belongs to green areas where either tax rules or judicial orientations are blurred. In such conditions the risk of a tax scrutiny is not trivial. For this reason tax aggressiveness is a characteristic that can be attached only to given firms.

What is of relevance here is to explore if tax aggressiveness plays a distinct role in explaining reporting conservatism, role that is different from tax institutions. The idea

is to explore if the general concept of taxation can be distinguished into more specific factors.

The second research question is as follows:

Has tax aggressiveness a role in explaining reporting conservatism that can be distinguished from tax institutions?

With this respect it is clear that tax policies are related with the way in which taxes are computed and withdrawn⁴. In what follows the attention is on corporate income taxes computed starting from book income and whose reduction requires conservative accounting policies.

Finally, it is reasonable to hypothesize that both factors, other than operating autonomously, play also a common role on conservatism. The legal tax framework can operate in conjunction with the firm based tax aggressiveness in that it can widen or reduce its impact on financial reporting. So we want to analyse also the combined role of institutional and firm-based factors on conservatism:

What is the joint impact of tax institutions and firm tax aggressiveness on reporting conservatism?

1.2. Findings and contribution

This paper provides evidences on the importance of taxation for reported earnings. From a general point of view, it is demonstrated that the change in the tax system deeply affects the level of reporting conservatism. In particular, the introduction of a greater independence between book and tax income determines a reduction in observed conservatism. This proves the relevance that tax issues have on financial

⁴ Taxes that are computed on other definitions of income can produce different effects. For example, IRAP (a tax on value added) forces firm to manage earnings upward to avoid the reporting of losses in that taxable income in this case is equal to operating income.

reporting. Along with this, it is found that tax aggressiveness also plays distinct role in explaining reporting conservatism. The more the firm is tax aggressive, the more it is conservative. This result holds even after taking into consideration the institutional tax setting. Moreover, it is shown that the role of tax aggressiveness is reinforced when book and tax income are tightly linked. So the two explanations of taxation are found to have a reinforcing effect in explaining conservatism.

The paper contributes the literature under different respects. First of all it demonstrates that the level of conservatism changes over time if the institutional tax setting changes over time. As indicator of this it is taken the general way in which book and tax income are related even if it is not the focus of the paper. This is relevant for the literature on conservatism in that up to now very few papers have analysed the change in reporting conservatism over time and none of them uses a variation in the tax system as the main explanatory factor. The second contribution is in the literature on tax accounting. Despite many studies have been delivered on a feature of tax system or the tax aggressiveness of managers no one of them takes into consideration both elements and their joint impact on the quality of earnings. This paper demonstrates that taxation is a complex construct that needs to be addressed more accurately. In particular, it is suggested here the idea that the influence of taxation on conservatism is due to both the way in which the relationship between book and tax income is modelled (institutional factor) and to the tax planning ability of managers (tax aggressiveness) the consideration of only one of them being partial. So taxation can be referred to these two elements and moreover the interaction of them on conservatism is not trivial. This shows that more precise results can be obtained by dealing with taxation in a more accurate way.

2. Literature review

In order to answer the research questions mentioned above, two strands of literature are used. The first one is on taxation and deals with the incentives that tax laws give to managers and how the trade off between tax minimization and other reporting constituencies is solved. The second relevant block of literature is on reporting conservatism. Taxation is a source of conservatism and this justifies theoretically the use of this concept in evaluating tax issues.

2.1. Taxation and financial reporting

Prior tax accounting studies basically address the tax and no-tax trade off (Shackelford and Shevlin; 2001). The basic idea is that taxes cannot be minimized without affecting other relevant economic goals. On one side, the incentive to reduce taxes leads to a lower reported income. On the other side such income is used by many stakeholders⁵ as the baseline to specify the terms of trade and this usually generates in the firm the opposite incentive, that is the increase of reported income. So the trade off is in comparing the benefits of a tax minimizing decision with the costs that this very same decision produces in other business functions as marketing, finance or production. Within this general framework, tax accounting studies can be grouped as follows.

A first group of papers has a very limited scope and deals with evaluation criteria adopted for inventories. The point of interest is to see if firms in financial statements adopt or not LIFO, the method allowed by tax laws. LIFO, given some assumptions on prices and variation of stocks, reduces both earnings and the present value of corporate taxes. Kang (1993) argues that the adoption of LIFO is accompanied by a negative stock return in that the market recognizes in such a choice an optimizing strategy against a predicted adverse change in input prices rather than a device to

⁵ For example lenders, customers and suppliers use reported income to specify the contractual conditions with the firm.

reduce taxes. This claim is supported empirically by Hand (1993) that documents a negative relation between the adoption of LIFO and stock return. The claim that taxation is the main driver in the choice of inventory costing method and in particular LIFO is supported by many other studies (Dopuch and Pincus; 1988; Cushing and LeClere; 1992). Inventory management is also of relevance. Dhaliwal, Frenkel and Trezevant (1994) show that the decision to liquidate LIFO layers is more common for low tax firms in that this choice increases taxable income.

Another group of studies deals with the interrelations between taxation and financial reporting. This stream of research started when the Tax Reform Act, containing a planned reduction in tax rates, passed in US in 1986. This gave managers the opportunity to plan income shifting to obtain tax savings. The first study on this topic is the one of Scholes et al (Scholes, Wilson and Wolfson; 1992) that finds evidence on the tendency of firms to early recognize expenses or defer revenues to reduce taxes. However, this behaviour is not uniform among firms. Other financial reporting considerations impede income shifting. For example, accelerate expenditures reduces the operational efficiency of the firm and defer revenues creates frictions with customers. Guenther (1994), using the same scenario, takes explicitly into consideration reporting costs that income shifting can imply. In particular, political costs and debt covenant violations play an important role in affecting the tax no-tax trade off. It is found indeed that firms engaging in income shifting are large and with low level of debt and firms with high leverage are less willing to reduce earnings for tax considerations. Similar studies are made by considering loss carrybacks to test the loss maximizing hypothesis the year before the tax reduction. In this sense Maydew (1997) shows that such an incentive is greatly conditioned by financial reporting constraints.

In the same line there are studies on alternative minimum tax (AMT), introduced in US from 1987 to 1989. This system was structured in a way that reported income was a component of taxable income. Such tight link between book and tax earnings gives the opportunity to analyse in depth the trade off between tax policies and

reporting incentives. Alternative minimum tax deeply affects earnings because it introduced a strong incentive to decrease income (Gramlich; 1991). Several studies empirically show that firms shifted income from 1987 to 1986 to avoid the AMT (for all: Dhaliwal and Wang 1992; Manzon; 1992).

The influence of taxation on financial reporting has been analyzed also with reference to other relevant issues. Keating and Zimmerman (2000) show that holding and depreciation period of assets depend on tax considerations and in particular on statutory lives stated by tax authorities. Another piece of evidence is documented by Guenther et al (Guenther, Maydew and Nutter; 1997) who examine the behaviour of firms forced by law to switch from cash basis to accrual basis for tax purposes only. Firms formerly adopting cash basis in financial statements started to defer reported income by adopting the accrual basis. Cloyd et al (Cloyd, Pratt and Stock; 1996) consider financial reporting decisions when the fiscal treatment of some items is not clearly stated by tax law. This lack of clarity constitutes a potential source of litigation. It is found that firms adopting aggressive tax policies use the same accounting choices for both tax and financial statements purposes. Financial reporting is in this way used to legitimate fiscal positions in so reducing the risk of litigation with tax authorities. A similar result is obtained by Mill (1998). He shows that the audit of tax authorities is more likely when taxable and book income are very different. Such result implies the existence of a strong link between the reduction of the tax burden and the computation of reported income. As a matter of facts, large book and tax differences increase the risk of scrutiny by tax authorities (Mills and Sansing; 2000).

To summarise, the reviewed literature provides some evidences on the impact of tax rules on financial reporting, however, it takes into consideration either only the institutional side of taxation, in the form of new tax laws, or only firm-based factors related to the incentive of managers to pursue tax minimizing behaviours.

Such a literature can be extended in different directions. First, the institutional side of taxation can be addressed by looking, rather than at specific tax issues, at the way in

which book and tax income are related. This provides a more general framework for the analysis. Moreover, the change over time of the analysed setting provides interesting opportunities to evaluate the relative weight of taxation on reported income. A second extension is the simultaneous and explicit attention put on both the institutional and the firm based tax factors. This is important to appreciate the weight and the role of each component in explaining the observed features of reported earnings.

To reach this purpose, it is necessary to find a way to evaluate, at a global level, the impact of taxation on earnings. This can be made by considering one general feature of earnings deemed to be affected by taxation markedly reporting conservatism. So, the second stream of literature useful to conduct the analysis deals with conservatism.

2.2. Reporting conservatism and taxation

2.2.1. Definition of conservatism

Conservatism in financial reporting consists in a “cautious” or “prudent” attitude in measuring assets and income. It leads the preparer of financial statements to a faster recognition of expenses rather than revenues and to a higher evaluation of liabilities than assets (Wolk, Francis, Teary; 1989). Reporting conservatism received much attention in the accounting literature after the paper of Basu (1997) that opened a new perspective: the possibility of studying conservatism using income statement rather than the traditional balance sheet approach. Due to this renewed attention, conservatism can be considered an important dimension of earnings quality, intended as the attitude of accounting numbers to reflect in a reliable way the current and long run performance of the firm (Dechow and Schrand; 2004). Conservatism implies that costs need to be recognized in full even if they are only predicted, and revenues are not recognized until their realization (Bliss; 1924). In so doing, earnings become a reliable picture of underlying operations. A consequence of conservatism

is greater earnings verifiability because it ensures that realized profits only are recorded. This implies the persistent underestimation of net assets with respect to their current value and the enhancement of future earnings (Watts; 2003).

The literature distinguishes between two types of conservatism (Ryan; 2006). The first one is conditional or news dependent, also referred as ex post conservatism (Basu; 1997): firms, upon receiving bad news, will write down assets on a timely basis, the same being not true for writing up assets when good news arrive⁶. The second type of conservatism is unconditional, also called news independent or ex ante conservatism, in that it reflects the deliberate choice of accounting policies that underestimate net assets and earnings⁷.

2.2.2. Explanations for conservatism

According to the accounting literature conservatism has different determinants, briefly outlined below.

The contracting perspective constitutes the first and the most important explanation of conservatism. The relationship among managers on one side and shareholders and lenders on the other is usually affected by asymmetric information with the consequent agency costs (Jensen and Meckling; 1976). Managers indeed have the incentive to bias equity and book values upward to maximise their compensation and in general to satisfy their own utility function (Watts; 2003). To put a constraint on such behaviour both shareholders and debt holders, in contracting with the firm, require conditional conservatism to improve contracting efficiency. As Ball and Shivakumar (2005) show, conditional conservatism leads to a timely recognition of

⁶ Examples are the impairment of assets and the evaluation of inventory at the lower between cost and market value.

⁷ Examples are given by accelerated depreciation and the expense of costs related to intangible assets.

losses arising from investments with negative net present value and this, other than preventing investors in financing bad projects, let them know the real performance of operations. This improves contracting efficiency and the discovering of debt covenant violations. Moreover, the adoption of reporting conservatism can be a way to reduce the conflict between shareholders and lenders over the dividend policy (Ahmed, Billings, Morton, Harris; 2002). Even if unconditional conservatism also restricts managers' ability to expropriate wealth for themselves in so damaging shareholders (LaFond and Watts; 2007), the contracting perspective is deemed to generate more the conditional form in that investors and lenders can impose news dependent costs to the firm via governance mechanisms and debt monitoring (as reduced compensations or immediate repayment) (Gopalakrishnan and Parkash; 1995).

Another relevant explanation for conservatism is litigation. The basic assumption is that the overstatement of firm assets is more likely to produce litigation costs than their understatement. This creates an incentive for conservatism (Watts; 2003). Kellogg (1984) shows that in securities litigation the lawsuits of buyers against the company are far less than the ones of sellers in so demonstrating that the risk of legal actions is more likely in case of overstatement than in the case of understatement of earnings. Such evidence confirms the claim of Beaver (1993) who argues that conservatism augmented in US after the introduction of the Securities act that increased greatly the litigation risk with shareholders. Given that litigations usually arise when earnings are overstated, conservatism represents a way to attenuate this risk.

Regulators and standard setters are also considered as actors that have the interest to induce conservatism. Provided that regulators are more likely criticised when firms overstate their assets rather than in the opposite case (Watts; 1977), they satisfy the demand of different constituencies by inducing conservatism either informally or by issuing new rules. Firms usually know this intention and tend to be conservative in order to avoid a direct intervention of regulators (Qiang; 2007). Recent evidences on regulation are given by Lobo and Zhou (2006). They show an increased level of

conservatism in financial reporting after the introduction of the Sarbanes-Oxley act in US, triggered not only by the new rules issued but also by the subsequent requirements of SEC. In this sense, regulation can be seen as a factor apt at changing the managerial discretion over earnings.

The last driver of reporting conservatism is taxation. The asymmetric recognition of gains and losses can be used by managers to reduce taxes and at the same time to increase the value of the firm (Watts; 2003). This type of conservatism can be seen as a reaction of firms to reduce the negative effects of public policies (Basu; 2005). First evidences on the influence of taxation on reporting conservatism are given by Watts (1977) and Watts and Zimmerman (1986). They suggest that firms increased depreciations after the Corporate Tax law passed in US in 1909. It introduced, as a requirement for deductibility, the charge of depreciations in income statement. A similar phenomenon occurred after the Great depression. In the evaluation of inventories, firms adopted the LIFO method to contain the impact of inflation on income taxes (Moonitz; 1953) and in the same time they discarded the “lower between cost and market” criteria in that it was not permitted by fiscal laws (Kieso and Weygandt; 1997). Another piece of evidence in this sense is the one of Raby (1963) that documents the tendency of firms to full expense their research and development costs even before it was required by SFAS 2, due to a tax conformity rule.

It is quite clear that taxation affects the decisions of managers and generates unconditional conservatism because it produces tax deferring through the charge of extra expenses. In the same time conditional conservatism is less affected by taxation in that the costs that it implies, mainly due to evaluation issues, usually are not tax deductible (Qiang; 2007). In this sense unconditional conservatism is easier to manage because it is not linked to external news. It is relevant to underline that taxation influences conservatism through the link between tax and book income (Shackelford and Shevlin; 2001).

The literature on conservatism can be extended in two directions. The first one is to take into consideration the relationship between taxation and financial reporting and its evolution over time. It can be interesting to see what happens to conservatism when existing tax rules vary. This topic is quite unexplored due to the difficulty to find events that clearly affect such feature of earnings. The separation between book and tax income offers an opportunity to analyze such a situation and this is one of the first study using a change in tax rules as the main determinant to appreciate a change in conservatism over time. The second extension is the analysis of the impact of two different factors on conservatism: the institutional tax framework and the attitude of managers toward taxation. The idea is that each element has a definite explanatory role and the joint consideration of tax institutions and manager attitude can uncover interesting relations. Both drivers are important, the consideration of only one of them being partial.

3. Hypothesis development

The reviewed literature suggests that some external factors have an impact on the level of observed conservatism. These are represented by legal and judiciary systems, security and tax laws (Bushman, Piotroski; 2006; Ball, Kothari, Robin; 2000) that affect the asymmetric recognition of gain and losses. The level of observed conservatism is also the consequence of reporting choices made by managers. Gassen et al (Gassen, Fülbier and Thorsten; 2006) show that institutional factors affecting conservatism lose of explanatory importance if firm specific factors are controlled for. Lubbernik (2001) explains the differences in observed conservatism using as explanatory factor the different level of managers risk aversion. He shows that risk adverse managers report more conservative earnings to offset the variation in their compensation. As mentioned before, taxation also can be considered as both an institutional factor and a characteristic of the single firm.

The institutional side of taxation is represented by legislative devices, and in particular how and to what extent tax criteria are allowed in the computation of book income. The relationship between book and tax income is largely determined by tax laws.

The firm based side of taxation depends upon the behaviour of managers. Existing tax laws usually allows higher deductions of costs or postponement of revenues as ways to reduce the tax burden. Such opportunities are not mandatory and managers can make use of them or not. One example is given by accelerated amortization⁸ whose purpose is to favour investments and does not reflect the real depreciation of assets. In general, if managers use systematically tax reduction devices, the character of earnings will be affected also, in term of higher conservatism. Obviously, this is not the situation of all firms in that other constituencies can affect conservatism in the opposite direction. It depends on how the trade off between tax and no-tax costs is solved by managers. It is reasonable to hypothesize that tax concerned managers will solve this conflict in favour of tax minimization. This is what is here called as firm based tax aggressiveness.

To summarise, the impact of taxation on reporting conservatism is disentangled into two main factors: institutional and firm based. The first has its roots in the legal relationship between book and tax income and the second depends upon the attitude of managers toward tax minimization. Each factor plays a role in determining the level of conservatism.

3.1. The impact of tax institutional factors on reporting conservatism

The first side of taxation that is analyzed is the institutional one intended as the relationship between book and tax income as stated by tax laws. Previous literature

⁸ Accelerated depreciations are different from the so called emergency depreciations in which the rate of amortization set over the fiscal threshold is justified by a deterioration higher than usual.

finds in this relationship a link between taxation and conservatism (e.g. Gramlich; 1991; Quiang; 2007). Before stating hypotheses it is relevant to see how this relation operates in practice.

3.1.1. The institutional relationship between book and tax income

In general, book and tax income are based on different principles. On one side, it is a general rule of quite every tax system that taxable income needs to be an objective measure of the produced richness. This requires a detailed set of rules that state the criteria for deduction or taxation. On the other side, accounting regulation pursues the transparency, the reliability and the completeness of financial reported data. For this reason managers have a given room of discretion in that not all the contingencies can be predicted by regulators. So flexibility is a way to adapt general rules to the changing economic environment in which they are applied.

Given that tax and financial reporting income have to satisfy different set of goals, there are two general ways to model the relationship between them. The first one is to keep the two figures of earnings separate, in that each one is determined autonomously according to its own set of rules. So taxable income is computed without any reference to earnings shown in financial statements in that there are complete tax rules stated for the preparation of a fiscal income statement that shows in the bottom line taxable income. In this setting, in principle, no interrelations between book and taxable income occur. This system, adopted in UK, is also called “double rail” or twin-track.

The second model, usually labelled as “mono rail” or single track system, leads to a unique figure of income valid for both financial reporting and tax considerations. This avoids the costs of a double accounting system. Such a perspective can be applied in two different ways. In the first one, tax rules are completely aligned with accounting principles. This means that charging and evaluation policies adopted in preparing

financial statements are considered valid also for tax purposes. In the present case the problem of interferences is inexistent due to the complete identification of tax and accounting rules. The second way to apply the mono rail is the so called reversed dependence where accounting principles can be derogated to apply fiscal criteria. This implies an income statement deeply influenced by tax determinations. Such a situation characterizes the German system in which the so called determination principle states that no distinction exists between financial statements prepared for tax purposes and the one published in financial reports. The consequence is that fiscal rules prevail over the rules of the Commercial Code (Choi and Meek; 2008, p. 66).

It has to be underlined that in reality mixed models are usually adopted. Tax laws state precise rules but, at the same time, the starting point to compute taxable income are financial statements earnings, considered as a reliable quantification of the produced richness. Earnings are then modified in order to take into consideration stricter tax rules on particular items. To the extent that such modifications are allowed directly in financial statements the impact of taxation on earnings number is largely determined.

3.1.2. The situation in the analyzed setting

In this paper we use Italian companies to test our hypotheses. In Italy, the single-track system, in the version of “reversed dependence”, has been traditionally followed. Fiscal interferences were allowed in financial reporting. Starting from 2004 new rules have been established in the direction of the twin-track system, although without completely separating the two figures of earnings. This change in the institutional setting is a fertile ground for analysing the impact of taxation on financial reporting. A brief description of the setting is useful to better understand the underground of the paper, with an important preliminary remark. In Italy mono and double rail are not implemented rigorously and so these terms need to be intended in

a conventional way in the sense that the legal framework has the main traits of one or the other theoretical referent. In order to understand how tax rules interfere with the preparation of income statement, it is worth introducing the distinction between tax incentives and tax restrictions. To tax incentives belong all the fiscal rules that gives the opportunity to reduce current taxes by accelerating the deduction of costs or increasing their amount above the level economically justifiable. Even if such fiscal facilities pursue general economic goals as the efficiency of the production system, they usually have an impact on financial reporting if extra deductions are subordinated to the charge in income statement. An example is accelerated amortization, whose goal is to incentive the technological renewal of firm assets. To deduct the doubled amortization it can be required by tax laws the expense in income statements. Another case is the option to fully deduct research and development costs in the year they are sustained, even if they can be referred to more than one period. Tax restrictions are instead rules that limit the freedom of managers in preparing financial reporting and are guided by tax considerations only. They are functional to the objectives of tax regulations. Examples are allowances for doubtful accounts, deductible only in the limit stated by law or the amortization of goodwill, that can be deducted in the limit of 1/5 each year.

By looking at this distinction it is evident that the main source of interference of tax law in financial reporting belongs to the first category, i.e. the rules containing incentives. The degree of interference depends on the tax system enforced in a given point in time. During the mono rail period until 2003, the consolidated tax law (the former section 75) required the recording in income statement of the extra deductions made by the firm. To this is has to be added that the 2nd paragraph of the section 2426 of the Italian Civil Code allowed the possibility to charge in income statements values, adjustments and provisions made solely in accordance with tax rules. This regulation, joined with the previous one of mandatory charging of expenses for tax purposes, created the gateway for fiscal interferences in financial statements. The only way through which external readers could learn about the entity of these

interferences, was through the notes to accounts. They had to describe the reasons and the values of provisions and adjustments made exclusively for tax purposes. As for the fiscal rules limiting the deductions of costs (tax restrictions) they have an impact mainly on the computation of taxable income, in that if firms in income statement charge more than the limit, the excess will be taxed. Given this picture, is clear that the risk of not obtaining tax reductions can lead managers to adopt tax criteria in preparing financial statements. It is true mainly for non monetary costs, the ones that do not arise from exchanges with third parties but are the consequence of managerial evaluation.

Such picture has changed starting from 2004. Section 109 of consolidated tax law allowed the deduction of depreciations, value adjustments and provisions even if they are not charged in income statement. The deduction is made possible by making use of a given prospectus attached to fiscal declaration. In the same time the 2nd paragraph of section 2426 of Civil Code was dropped and so the charging in income statement of costs with fiscal only justification is forbidden. From this moment on, income is computed following only the requirements of the Civil code and accounting principles. Such a new configuration of civil and tax rules moves Italy toward the so called twin-track system.

It important to underline that the described separation between book and tax income as results after 2004 is far from being sharp. Extra deductions are allowed only for some categories of costs as depreciation and amortization, not just the entire set of costs that can create fiscal interferences. The twin track mechanism does not encompass monetary costs and the costs not named in the tax law. So it remains the option for managers to qualify as economically justifiable choices that are indeed tax based. For example, the use of LIFO or the so called stair LIFO, among other criteria, can be a way to reduce taxable income in a period of increasing prices.

Before stating hypotheses, some brief considerations about the Italian setting are worth making. The first one is about the accounting principles adopted. As stated

above, firms in the sample prepare financial statements following the rules of Civil code and the standards issued by Italian accounting bodies (e.g. OIC). Such set of rules, that are in line with the IVth European directive on annual accounts, put particular relevance on the principle of prudence in evaluation issues. The aim is to avoid that unrealized earnings are displayed in income statements and so the guarantee represented by equity capital for debtors vanishes. So the principle of prudence that lead to conservatism also interact with the fiscal interferences studied in this paper. What matters is that the Italian principles gives more relevance to prudence as compared to International accounting standards or US GAAP. The second remark is about the tax burden faced by firms. In the near past, before the sampling period, the corporate tax rate reached the peak of 53,2% in so making Italy one of the country with the highest fiscal pressure. This raises another relevant point represented by tax evasion, a problem that traditionally has been relevant in Italy. To face this problem in 1997 has been introduced a new corporate tax called IRAP, computed on the value added. This tax is characterized by a large taxable income equal to the difference between operative revenue and costs excluded some categories of costs as depreciation and labour costs. Even if the tax rate is relatively low (4,25%) the incidence of this tax is very high as compared to pre-tax income and this leads to the incentive to increase earnings to avoid losses. As for the situation of interest, it is relevant to notice that the effective tax rate of the firm, due to IRAP, This gives firms the incentive to increase pre-tax earnings to reduce the tax burden and pay lower taxes. But increasing pre-tax earnings without paying higher taxes is a problem during the mono rail period where it represents roughly taxable income. This incentive is instead easier to implement during the double rail period where pre-tax income is relatively independent from tax issues. So it is possible that the claimed reduction of reporting conservatism is influenced by this factor also.

3.1.3. The hypothesis

The first hypothesis aims at testing the impact of taxation on reporting conservatism when the tax institutional framework changes. This is the focus of the paper and as indicator of the legislative setting it is taken into consideration the legal relationship between book and tax income referred herewith as mono and double rail. It is important to clarify that the interest is not on these two systems per se and in their pros and cons but they are functional to the study of what happens to conservatism when the institutional setting has a discontinuity.

In the case of mono rail, where the deduction of some categories of costs is subordinated to the charge in income statement, the tax factor will largely affect financial reporting and in particular will induce high conservatism.

After the double rail is introduced by law, the institutional impact of taxation on reporting conservatism is expected to diminish in that costs with fiscal only justification⁹ are now charged directly in tax declaration. This supports the expectation that during the mono rail period taxation will drive more conservatism than in the double rail one. So the following holds:

H1. Reporting conservatism will be higher during the mono rail period than in the double rail one.

To date, very few studies deal with changes in conservatism over time. One example can be found in Basu (1997) that documents the increase of conservatism after the adoption of a new auditor legal liability regime. A similar hypothesis can be tested with respect to taxation by comparing two periods where a different tax regulation is enforced. With this respect is important to signal that the scenario used here is very different from the study of Basu. In the present paper what changes is the degree of overlapping between book and tax income and in a sense it is the change in tax rules that drives the variation of conservatism over time, even if the

⁹ Examples are accelerated amortization, provisions for bad debts and depreciation of investments.

entity of such variation is not common to all firms in that depends upon the fiscal policies implemented.

3.2. The impact of firm based factors on reporting conservatism for tax purposes

The second relevant side of taxation is represented by tax aggressiveness intended here as the propensity of managers in engaging in tax minimizing behaviours. This goal can be pursued in two ways. The first one is the extensive use of the opportunities allowed by existing laws to obtain tax reductions by charging higher costs. The second is the adoption of financial reporting choices that reduce pre-tax earnings, the starting point to compute taxable income. Even if in principle all firms want to minimize the tax burden, in reality only some of them do this. The reason is that tax reductions generate side costs that in some cases can be such that this goal is no more economically convenient. Tax aggressive firms present the specific feature of using on a systematic fashion the options allowed by law to contain taxes and in the same time they face a relatively higher degree of risk in that the adopted choices are sometimes made in situations of high legislative or judiciary uncertainty. For them, the trade off between tax and book income is mainly solved in favour of the former with clear implications on earnings number. In this sense, the literature acknowledges the impact of prior tax aggressiveness on earnings management (Lopez et al; 1998). On the basis of the above conjectures, it can be hypothesized that tax aggressive firms will be more conservative than non aggressive ones in that tax minimizing decisions will usually imply lower earnings. It is important here to specify that the role of the firm specific tax attitude on earnings is autonomous and different from the one played by tax institutions, even if some complementary cannot be excluded, as explained below. The claim is here that tax aggressiveness has an impact on conservatism and operates through avenues that are partially different

from the legal relationship between book and tax income. The following can be stated:

H2. There is a positive relationship between tax aggressiveness and reporting conservatism.

3.3. The joint impact of institutional and firm based tax factors on reporting conservatism

As stated above, each side of taxation operates autonomously in affecting conservatism. However, an interaction between the two can be hypothesized and in particular a moderating role played by tax institutions. In the case of mono rail tax aggressiveness is expected to have a greater impact on conservatism. The more the firm is tax aggressive the more it will make use of tax reducing devices and via the link between tax and book income, the latter will be largely affected. The firm based attitude will be reinforced by the institutional setting. The expectation is that tax aggressiveness combined with a mono rail system, will determine a high level of tax induced conservatism. So the following can be formulated:

H3. The impact of tax aggressiveness on reporting conservatism is widened when the mono rail system is enforced.

4. Methodology

4.1. Sampling

The sample is drawn from Italian private limited liability companies (Srl and Spa). The use of non listed firms allow a larger number of observations and avoids the problem of the change in accounting principles that exists for listed firms that in 2005 had to adopt international financial reporting standards. All industries are included in the sample except banks and financial intermediaries because they have a different

economic structure and are subject to peculiar fiscal rules. To be sure that companies issue financial statements in the ordinary and not abbreviated form, three dimensional criteria are adopted. Firms need to have revenues greater than 6.250 million of euros, total assets greater than 3.125 million of euros and more than 50 employees¹⁰. For the analysis it is taken into consideration the individual financial statements prepared according to the rules of the Italian Civil Code, integrated by Italian accounting principles. The decision to not deal with consolidated financial statements is justified by the uncertain meaning that income taxes have on this type of document. Companies controlled by listed firms are excluded to avoid the interference of extraneous incentives.

The sample is composed by 2.049 companies. The analysis takes into consideration the same firms before and after the adoption of the double rail. To carry on this comparison two time periods are analysed, that is 2000-2003 and 2004-2007. The final sample is made of 16.392 firm-year observations.

4.2. Operationalization of variables

4.2.1. Main variables: conservatism and taxation

Conservatism can be operationalized in different ways. Provided that the sample is composed by private companies and methods based on stock returns (as Basu; 1997) are unfeasible, a measure based on accruals is adopted. It rests on the idea that asymmetric recognition of gains and losses produces asymmetries in accruals also (Watts 2003). This happens because losses are accrued in full when they occur and gains are not. The measure of conservatism used in what follows is based on Givoly and Hayn (2000). The rationale is that conservative accounting choices lead to persistently negative accruals over time, in contrast with the normal pattern of their reversal. The higher are negative accruals over the elected period, the more

¹⁰ These are the limits stated by the IV directive of European Union and by Italian legislation (D.gls 127/1991).

conservative is the accounting number. Such a measure is neither affected by future growth opportunities nor by the effects of conservatism in prior periods, in that it does not incorporate cumulative conservatism (Ahmed and Duellman; 2007).

According to Givoly and Hayn (2000), total accruals can be divided into operating, related to working capital, and non-operating, encompassing depreciation, amortization, provisions, assets write-downs, capital gains and deferral of revenues. Such portion of accruals is deeply affected by tax issues in that it presents a high degree of discretion. Operating accruals are less easy to manipulate and usually have an accumulation pattern very different from non-operating ones (Givoly and Hayn; 2000). The adopted measure is as follows:

$$OPACC = \Delta ACCOUNTS RECEIVABLE + \Delta INVENTORIES + \Delta PREPAID EXPENSE \\ - \Delta ACCOUNTS PAYABLE - \Delta TAXES PAYABLE$$

$$TACC = NET INCOME - CFO$$

Where CFO is cash flow of operations.

$$NOACC = TACC - OPACC$$

Where *OPACC* are operating accruals, computed with and without provisions, *TACC* are total accruals and *NOACC* is the measure of non-operating accruals, computed as the difference between total accruals and operating accruals. *OPACC* is scaled by lagged total assets and winsorized in the 1st and the 99th percentile to avoid the disturbing effect of extreme values. The resulting measure (*GHCONS*) is obtained multiplying *NOACC* by -1 to make it increasing in the amount of conservatism.

To test our hypotheses, the level of conservatism is regressed against two proxies of taxation, institutional and firm based.

To capture the institutional impact of taxation on reporting conservatism the variable *TAXMONO* is used. It is an indicator variable taking value one when the mono rail is enforced and zero otherwise. Provided that Italy is deemed to be a country with high

taxation with respect to other European countries, the relationship between taxation and reporting conservatism is expected to be high in that other contextual factors as the efficiency of the judiciary system and securities regulation exert a limited effect (Bushman and Piotroski; 2006).

For the tax attitude of the firm a new measure is developed (*TAXAGGR*). It does not rest on the traditional concept of long run effective tax rate, whose computation before the period under scrutiny is constrained by data availability. The idea is based on Scholes et al (Scholes, Wilson and Wolfson; 1992) and Guenther (1994) that document the tendency of firms in accelerating expenses or deferring revenues to reduce taxes when a planned reduction in tax rates occurs. Given that in the period under scrutiny tax reductions occur, the idea is to look at the behaviour of firms and qualify as tax aggressive those firms having a great positive change in accruals. The rationale is that if the firm is tax aggressive, it will reduce accruals the period before the tax reduction, to benefit from a higher tax rate for deductions and will increment them the year after to benefit from a lower rate for taxation. So the higher the change in accruals, the more the firm is involved in tax minimization. The measure is based on the version of accruals of Givoly and Hayn. In the two periods 2000-2001 and 2002-2003, when tax rates were reduced, the difference in accruals is computed. An indicator variable is then computed by assigning value 1 to those observations showing a change in accruals greater than the third quartile. The final measure puts together the two periods and label as tax aggressive firms whose change in accruals is greater than the third quartile in both periods. Accruals are scaled by total assets.

4.2.2. Control variables

By looking at the literature (Watts 2003; Qiang; 2008), other factors can influence the level of reporting conservatism. The first factor to control is linked to the contracting perspective. As explained above, managers due to compensation bonus, can have the incentive to manage earnings upward. A way to put a constraint on such

behaviour is to require reporting conservatism through efficient monitoring mechanisms. They raise the costs of opportunistic behaviours and lead to more discipline in financial reporting (Klein; 2002). Proxies of efficient monitoring are represented by strong governance mechanisms both in equity and debt contracting. A proxy of equity governance frequently used in the literature is the number of outside directors (Quiang; 2007). It cannot be used in the present case because private companies are not required by law to have independent directors. For this reason the existence of an institutional investor among the shareholders of the firm is used as proxy of governance (*INSTSHR*). We consider as institutional investors private equity firms, merchant banks, open funds and other investors that provide funds in the form of shareholders capital. The rationale is that such actors will require more conservatism because it allows, for example, the timely recognition of losses due to bad investments (Ball and Shivakumar; 2005). In this sense, a degree of influence over actions of managers is exercised. For the sake of completeness, it is worth mentioning that institutional investors usually behave differently when the divestiture date is approaching. In such case the attention shift to ebitda and in general on operating performance to improve as much as possible the return on the investment. This factor can impact on reporting conservatism in a way that is different from the one outlined above. Even if this is particularly true in the case of operating accruals, the point is worth mentioning.

As for debt governance, whose effects on conservatism are similar to equity ones, the amount of private debts over total assets is used. In debts are included bank loans and debt coming from other private lenders. Bonds and other types of public placements are excluded. Private lenders usually have more avenues to control the borrower than public ones (Dichev and Skinner; 2002) and so they are in the position to influence reporting behaviours.

A second dimension inducing conservatism is represented by regulation. In such a case conservatism is induced by the risk that the firm will be subject to accounting regulation or will capture the attention of public agencies. If the firm is big, in term of

market share or profitability, it is more likely that the attention of stakeholders as trade unions, contracting parties and regulators will be kept (Watt and Zimmermann; 1986). This could affect negatively corporate activities in terms of, for example, salary claims or regulatory decisions. Report conservatively will attenuate such problems. This effect is captured by the natural logarithm of total assets of the firm (*SIZE*).

A third dimension inducing conservatism is represented by litigation costs (Watts; 2003). In particular, the attention is here on the relationship with auditors. Firms are more likely to be sued for overstatement than for understatement of earnings. Auditors, to avoid litigations usually shift the related costs on firms by increasing fees or by issuing unfavourable opinions (Krishnan and Krishnan 1997; Pratt and Stice; 1994). A way for firms to avoid such costs is to report earnings conservatively. This dimension is operationalized by using an indicator variable taking value one if the firm is audited by one of the so called big four audit companies and zero otherwise. This grants the independence and the capability of the auditor in performing its activity.

4.3. The regression model

The regression model used to test hypotheses is defined as follows:

$$\begin{aligned}
 GHCONS_{it} = & \alpha TAXMONO + \beta TAXAGGR_i + \gamma TAXAGGRINT + \delta DEBT_{it} \\
 & + \zeta SALES GRO_{it} + \eta SIZE_{it} + \theta CFO_{it} + \iota AUDITBIG_i + \kappa INSTSHR_i \\
 & + \lambda LAGLOSS_i + \mu ROA_{it} + \nu SDROA_i + \varphi GDP_t \\
 & + INDUSTRY FIXED EFFECTS + \varepsilon
 \end{aligned}$$

Variables are so defined:

GHCONS : is the measure of reporting conservatism computed according to Givoly and Hayn, scaled by lagged total assets;

TAXMONO : is a dummy variable representing the institutional impact of taxation on conservatism. It takes value one in the period 2000-2003, when the mono rail is enforced and zero otherwise. The expected sign is positive, because when tax only costs are charged in income statements conservatism is positively affected (*H1*);

TAXAGGR: it is equal to 1 if the firm is classified as tax aggressive and zero otherwise. The expected sign is positive (*H2*);

TAXAGGRINT: is the interaction between *TAXMONO* and *TAXAGGR* and captures the differential impact that tax aggressiveness has on reporting conservatism during the mono rail regime. It is expected to be positive (*H3*);

DEBT: it is equal to the ratio between private debts and total assets. Private debts is the sum of bank debts and the other debts different from bonds publically placed and account payable. The relation with conservatism is ambiguous. On one side, private lenders usually induce conservatism due to their high level of power in term of governance and controls. On the other side firms have the incentive to increase earnings to not violate debt covenants and this reduces conservatism. For this reasons no predictions of sign are made;

SALESGRO: is sales growth. It controls for the portion of accruals that are due to the growth of the company. The sign is expected to be negative (Johnson, Khurana, Reynolds; 2002);

SIZE: is the natural logarithm of total assets, positively related with conservatism, because the firm in this case use conservatism to avoid political costs;

CFO: is cash flow from operations. It is considered because the measure of conservatism used here is based on accruals (Dechow and Sloan; 1995). The higher it is, the lower accruals and so the higher conservatism. The expected sign is positive;

AUDITBIG: is a dummy taking value 1 if the firm is audited by an big four audit company and zero otherwise. Auditors induce more conservatism in order to avoid litigations and reputational drawbacks. The predicted sign is positive;

INSTSHR: it accounts for contracting costs on the equity side. It is a dummy variable taking value one if among the shareholders there is an institutional investor, zero otherwise. The sign is expected to be positive;

LAGLOSS: is a dummy variable taking value 1 if the firm suffered a loss the year before, zero otherwise. If the firm experienced a loss, it has no incentives to report conservatively and even more to adopt fiscal decisions to reduce reported earnings (Desai and Dharamapala; 2006). So the sign is expected to be negative. Linked to this point is the issue of loss carry forward, where losses can be compensated with future earnings up to five years after their recording. In this case also it is reasonable to hypothesize an attenuated interest toward reporting conservatively. To obtain fiscal benefits from this mechanism it is necessary to have positive earnings the years after the loss is suffered and conservatism goes against this need. So such firms are expected to be less conservative than others the reason being just in the necessity of higher earnings to compensate losses and so obtain a fiscal benefit.

ROA: it controls for profitability. It is equal to the ratio between operating income and total assets. The predicted sign is positive in that firms with high profits can afford conservative choices better than firms with low earnings. In the latter case, the reduction of profits due to conservatism can be very costly (Ahmed et al; 2002);

SDROA: is the standard deviation of ROA. It controls for the fact that firms with great operating uncertainty will adopt more conservative accounting (Ahmed et al 2002). The sign is expected to be positive.

GDP: is the gross domestic product of each year taken into consideration, expressed in million of euros. It controls for macro-economic scenarios that might affect the level of reporting conservatism via firm behaviours. No predictions of signs are made.

5. Empirical results

5.1. Descriptive statistics and univariate analyses

A short overview of the characteristics of sample firms is provided in table 1 where descriptive statistics of the main variables are presented.

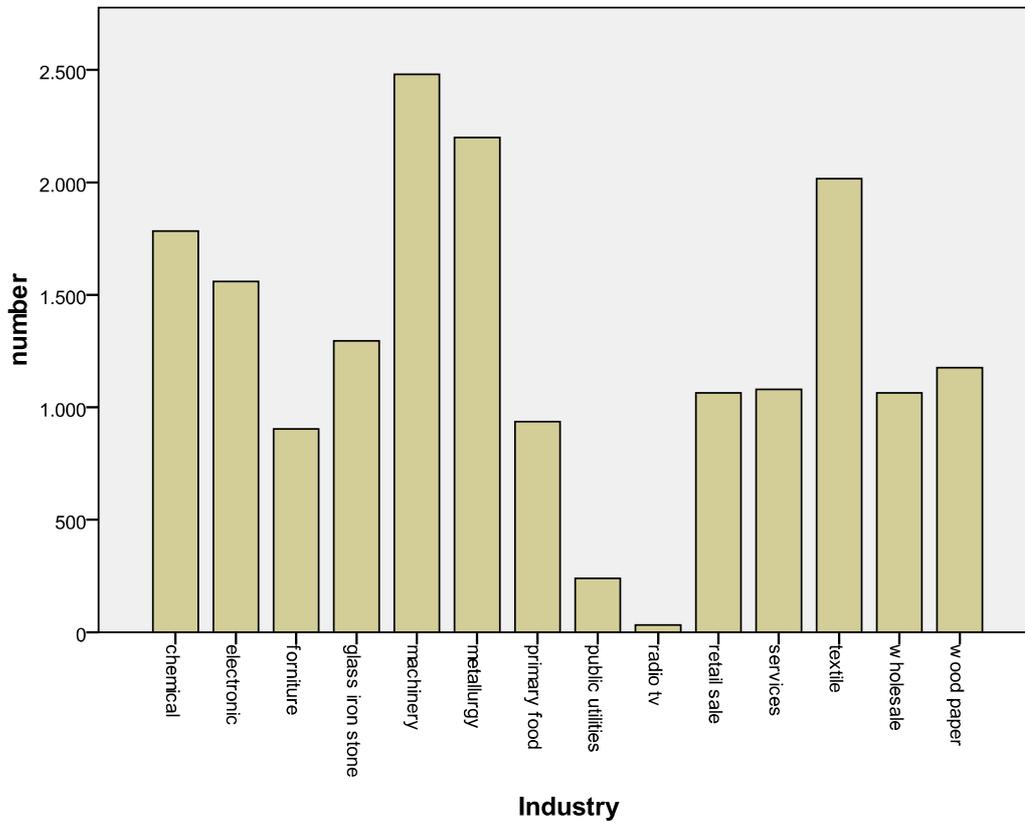
Table 1 - Descriptive statistics of the main variables

		GHcons	Debt	Salesgr	Size	CFO	ROA	GDP
N	Valid	16392	16392	16392	16392	16392	16392	16392
	Missing	0	0	0	0	0	0	0
Mean		,0896	,2339	,0679	9,8025	,0844	5,7100	1,3632E6
Median		,0700	,2200	,0500	9,6200	,0800	4,7400	1,3634E6
Minimum		-,05	,00	-,38	8,37	-,50	-14,16	1191057,00
Maximum		,36	,64	,91	12,64	,70	28,34	1535540,00
Percentiles	25	,0400	,0700	-,0300	9,1200	,0000	2,2800	1,2603E6
	50	,0700	,2200	,0500	9,6200	,0800	4,7400	1,3634E6
	75	,1200	,3700	,1300	10,3200	,1600	8,4100	1,4671E6

It can be noted that the mean value of conservatism in the period is positive and this shows a general tendency of firms in being conservative. Moreover, mean and median of the variables are very close to each other and so there are not extreme values producing distortions. The mean of the variable *SIZE* is equal to 5,6¹¹ corresponding to 32.203 thousands euros. The sample is then composed by medium size firms.

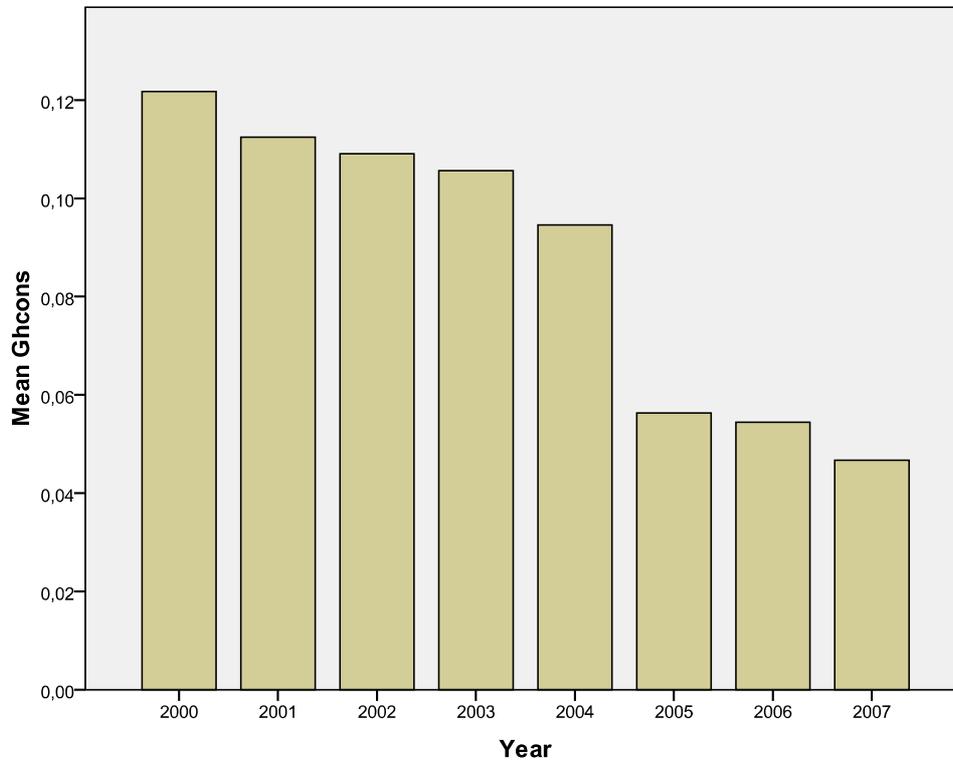
In graph 1 there is the distribution of firms among sectors. The sample is driven mainly by manufacturing industries.

¹¹ It is the natural logarithm of total assets.

Graph 1 - Distribution of firms among sectors

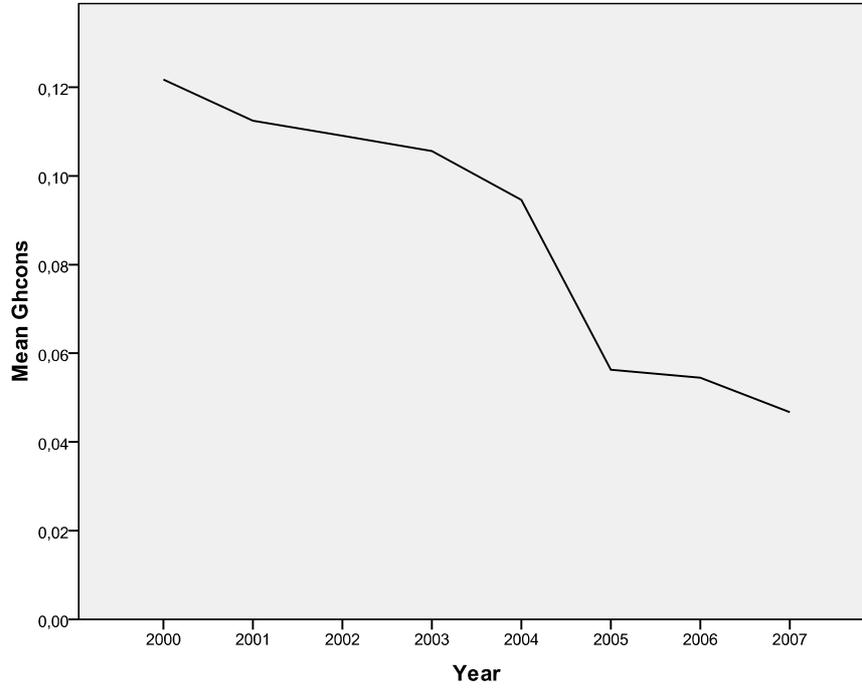
5.1.1. Reporting conservatism

The first point of interest is to see if the level of conservatism changed over time due to a variation in tax laws. This is made by comparing its mean value computed across two periods corresponding to the different tax regimes. The first period is 2000-2003 when the mono rail was enforced and the second is 2004-2007, the double rail years. If the tax regime is such that conservatism is affected, a difference in the two periods should be found. In Graph 2 the mean value of conservatism, computed according to Givoly and Hayn (GHCONS) is plotted in each year of interest. What clearly emerges is a decreasing trend in conservatism, sharper starting from 2005, the first year in which the double rail is fully enforced.

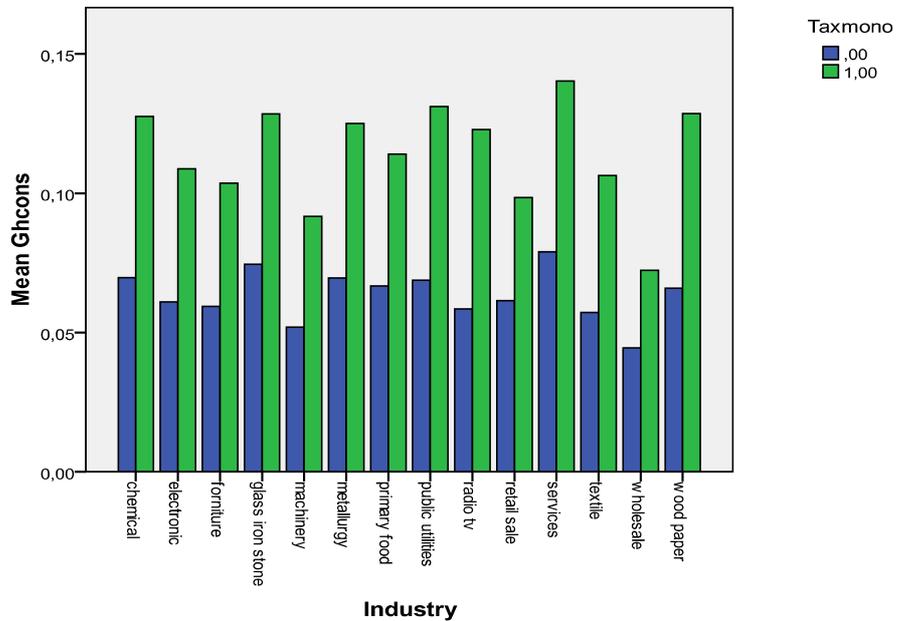
Graph 2 - Trend in conservatism over time (bar chart)

Graph 3 gives a clearer picture of this trend: the greater reduction of conservatism occurs just after 2004 where confounding effects due to the transition from one regime to the other can be at work. Graph 4 gives further details by comparing the value of conservatism before and after the mono rail period by industry. The scenario is the same: in all industries conservatism decreases in the second period.

Graph 3 - Trend in conservatism over time (line chart)



Graph 4 - Trend in conservatism by industry and tax regime enforced



Taxmono takes value one in the period of mono rail (2000-2001) and zero otherwise (2004-2007)

This initial intuition is then empirically tested by using a paired-sample t-test of means. It is suitable for the type of data analyzed here that come from a repeated measurement of the very same firms over time. To conduct the analysis, two pairs are built. In the first it is used conservatism of Givoly and Hayn computed without provisions (GHcons) and in the second the same measure includes provisions (GHconsprov). In each pair the comparison is made between the mono rail period (MONO) and the double rail one (DOUBLE). Table 2 shows results.

Table 2 Box 1 - Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GHconsMONO ^a	,1134	8196	,07566	,00084
	GHconsDOUBLE ^b	,0657	8196	,04936	,00055
Pair 2 ^c	GhconsprovMONO	,1124	8196	,07626	,00084
	GhconsprovDOUBLE	,0639	8196	,05043	,00056

a.Conservatism during the mono-rail period (2000-2003)

b.Conservatism during the double rail period (2004-2007)

c.Conservatism including provisions

Table 2 Box 2 - Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	GHconsMONO & GHconsDOUBLE	8196	,515	,000
Pair 2	GhconsprovMONO & GhconsprovDOUBLE	8196	,482	,000

Table 2 Box 3 - Paired Samples Test

		Paired Differences		Std. Error Mean	95% Confidence Interval of the Difference		t ^b	df	Sig. (2-tailed)
		Mean ^a	Std. Deviation		Lower	Upper			
Pair 1	GHconsMONO - GHconsDOUBLE	,04770	,06571	,00073	,04628	,04912	65,720	8195	,000
Pair 2	GhconsprovMONO - GhconsprovDOUBLE	,04850	,06820	,00075	,04702	,04997	64,376	8195	,000

a.The mean is equal to the difference between the first and the second term of the pair

b.Equal to the mean divided by the standard error mean

In box 1 it can be seen that the mean of GHconsMONO is equal to 0,1134 against a value of 0,0657 in the double rail years (GHconsDOUBLE). This confirms the reduction trend found in the above graphs. This is true also for the version of

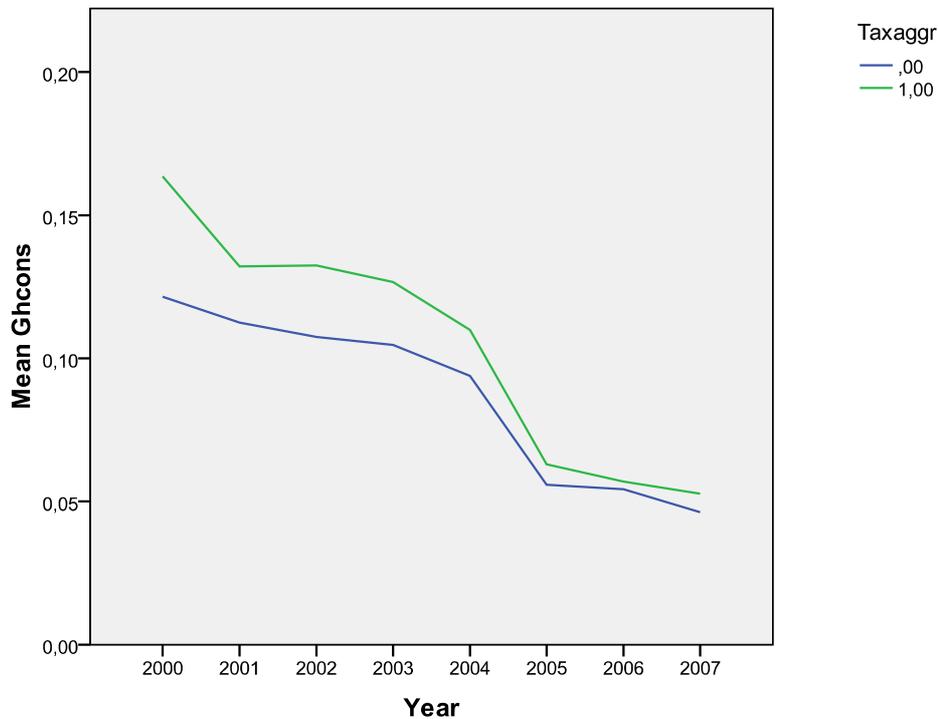
accruals with provisions (0,1124 against 0,0639). The low standard errors of means (equal to the ratio between standard deviation and the square root of sample size) tell us that the sample represents fairly well the population from which it is drawn and large differences in means are uncommon. This implies that if a difference in means is found, this is not due by chance but has an underlying motivation. Before entering in details, in box 2 the Pearson correlation is presented. As expected, the correlation coefficient between conservatism computed in the two time periods is quite high (0,515) and significant ($p < 0.01$ two tail) meaning that there are some consistencies in the behaviour of firms over time. In box 3 there are the results of the t-test. The mean difference between scores is around 0,048 in both the versions of conservatism. So in the first period conservatism is greater than in the second. The test shows that the probability to find a t statistic as the one computed ($t(8196) = 65,720$), under the null hypothesis, is very low ($p < 0,01$). So there is a remote probability that a value as big as the one found occurs under the hypothesis that no difference in means exists. This strongly supports hypothesis 1 and the consequent claim that reporting conservatism decreased after the introduction of the double rail. Another point to underline relates to confidence intervals that give the boundaries within which the true mean difference lies. In both cases they are [0,04628 ; 0,04912] and it is relevant to notice that such intervals do not contain the value of zero meaning that the true difference is unlikely to be zero. So the compared samples are not random but represent two situations in which firms are differently affected by some contextual factor, identified here by different tax legislations. The same results are obtained by running a one way ANOVA (untabulated).

5.1.2. Tax aggressiveness

The second relevant element under analysis is represented by the firm based attitude toward taxation. For this a specific measure based on accruals is developed. It rests on the idea that tax minimizing firms take advantage from planned tax reductions.

They shift income from one period to the other by lowering accruals the year before and by increasing them the year after the tax change. So the greater the variation of accruals in the period of a tax change, the more the firm can be deemed to be tax concerned. For this measure, the years considered are 2000-2001 and 2002-2003 when the tax rate decreased respectively by one and two basis points. Firms having a positive change in accruals in both periods greater than the third quartile, are labelled as tax aggressive. The decision to use such measure rather than the traditional effective tax rate is justified by the necessity to avoid the use of variables that are simultaneously determined in the single year, as accruals and ETR are. The reaction of firms to tax reductions can be seen instead as really exogenous in that this driver is extraneous to the formation process of financial statements.

It can be interesting to see how tax aggressiveness affects conservatism. In graphs 5 it is plotted the level of conservatism over time by partitioning the sample according to the tax attitude. It can be noted that tax aggressive firms, classified using the dummy variable TAXAGGR, present in the analyzed period a higher level of conservatism as compared to non aggressive ones. This is particularly true during the mono rail period when financial statements clearly reflect the tax choices made by firms. The trend is less sharp after the double rail was introduced and this can be seen as a consequence of the separation between book and tax income. Income decreasing policies are made directly in fiscal declaration in so reducing the tax driven conservatism.

Graph 5 - Evolution of conservatism over time according to tax aggressiveness

Taxaggr takes value if the firm is tax aggressive and zero otherwise

What emerges from the graph is confirmed by the independent sample t-test between the mean value of conservatism (GHcons) of tax aggressive vs no-tax aggressive firms (table 3). It can be noted that tax aggressive firms have a mean value of conservatism of 0,1058 against the 0,0884 of the non aggressive ones. The difference in means, equal to 0,01743 is statistically significant ($p < 0,01$) in so demonstrating that the tax attitude of the firm is apt at explaining the level of observed conservatism. The same holds for the version of conservatism with provisions (GHconsprov, in table 3).

Table 3 Box 1 - Group Statistics

	TAXAGGR ^a		Mean	Std. Deviation	Std. Error Mean
		N			
GHcons	1,00	1144	,1058	,07512	,00222
	,00	15248	,0884	,06746	,00055
Ghconsprov	1,00	1144	,1046	,07632	,00226
	,00	15248	,0870	,06840	,00055

a. TAXAGGR is equal to 1 if the firm is classified as tax aggressive and zero otherwise

Table 3 Box 2 - Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
GHcons	Equal variances assumed	29,992	,000	8,359	16390	,000	,01743	,00209	,01334	,02152
	Equal variances not assumed			7,621	1285,132	,000	,01743	,00229	,01294	,02192
Ghconsprov	Equal variances assumed	30,193	,000	8,293	16390	,000	,01754	,00211	,01339	,02168
	Equal variances not assumed			7,548	1284,580	,000	,01754	,00232	,01298	,02209

5.2. Multivariate analysis

Table 5 shows the result of the regression model. The aim of the analysis is to appreciate the distinct role that institutional and firm based sides of taxation play on reporting conservatism.

Table 4 - The regression model^{a, b}

Variables ^c	Beta	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
				Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)		25,324	,000	,303	,353		
TAXMONO**	,108	8,238	,000	,011	,018	,233	4,296
TAXAGGR**	,025	2,782	,005	,002	,011	,494	2,025
Taxaggrint**	,041	4,492	,000	,009	,022	,479	2,088
Debt**	-,035	-5,061	,000	-,019	-,008	,828	1,208
Salesgr**	,093	14,143	,000	,030	,040	,932	1,073
Size**	-,085	-11,905	,000	-,007	-,005	,788	1,269
CFO**	,325	47,982	,000	,120	,130	,875	1,143
AuditBig**	,040	5,807	,000	,006	,012	,859	1,165
Insttshder**	,021	3,270	,001	,003	,013	,979	1,021
Lagloss	-,005	-,711	,477	-,003	,001	,819	1,222
Roa**	-,054	-7,298	,000	-,001	,000	,726	1,378
SDRoa**	,056	8,563	,000	,001	,002	,947	1,056
GDP**	-,222	-16,974	,000	,000	,000	,234	4,267
Industry fixed effects	added						

a. Dependent Variable: GHcons; Number of firm-year observations: 16.392

b. Adjusted R square: 0,311 ; F statistics: 298,059 significant at 1% level

c. ** significant at 1% level; * significant at 5% level.

5.2.1. Tax related variables

The first element of interest is represented by TAXMONO, the indicator variable that represents the fiscal regime enforced in the first four years of the sample (table 4). It has a positive coefficient ($\beta=0,108$) that is also highly significant ($p<0,01$). This strongly supports H1. The mono rail system, characterized by a tight link between book an tax income, induces conservatism. The recording of deductible costs required by this tax regime is such that the figure of income showed in financial statements is deeply affected, this effect being common to all firms. Moreover, the significance of this variable, that divides the sample in two blocks, confirms univariate results in the sense that the two periods under scrutiny are in a way different with respect to reporting conservatism. The transition from one system to the other demonstrate the importance of taxation in shaping reporting incentives. On one side, the passage to the double rail removed from financial statements the so called tax pollution mainly responsible of the induced conservatism. On the other side it is

possible that the incentive to reduce the incidence of the tax on value added (IRAP) influence the increase of pre-tax earnings that in the period of double rail is without side consequences. So the separation between book and tax income operates in a general way both at the level of how taxable income is computed and also as an opportunity to increase earnings without further tax costs. The second element of interest is represented by the firm based tax attitude captured by the variable TAXAGGR. It expresses the tendency of firms to contain the tax burden through the reduction of earnings. As the regression shows, this variable presents a positive coefficient of 0,025 and it is statistically significant at the conventional level of 1 percent. This provides support to H2 in that the more the firm is tax aggressive, the more earnings will be conservative. Along with conservatism induced by the legal system, the consideration of the firm based attitude is important as well. At the micro level, tax concerned firms will try to contain earnings by making a systematic use over time of all the devices allowed by tax laws. This driver of conservatism appears to be autonomous from the institutional explanation in that even in the case of double rail firms will try to contain reported earnings because they still represent the starting point to compute taxable income.

The third element of interest is the joint role that tax institutions and firm based factors have on reporting conservatism. This is captured by the variable TAXAGGRINT that represents the interaction between TAXMONO and TAXAGGR. Still, the variable has a positive and significant coefficient ($\beta = 0,041$, $p < 0,01$). This confirms that the mono rail regime reinforces the effect of tax aggressiveness on earnings (H3). So the tax minimizing attitude of the firm widens its effects on conservatism when book and tax income are tightly related. This is clear when the use of the devices to reduce tax burden are subordinated to the charge in income statement.

5.2.2. Control variables

To complete the analysis, some comments can be made on the other variables that explain observed conservatism. These are shown in table 4 as well.

DEBT represents the amount of debt borrowed by banks or raised through private placement. The coefficient is negative and significant ($\beta=-0,035$, $p<0,01$). For this variable no predictions of signs were made in that both signs are equally meaningful. The sign resulting from the regression is negative, and it is coherent with the debt covenant hypothesis. Firms with high level of debts will increase earnings to avoid the violation of the contractual constraints posed by private lenders. This implies a lower level of reporting conservatism.

The growth of the firm, represented by the change in sales (*SALESGR*) positively affects conservatism ($\beta=0,093$, $p<0,01$). This contrasts with the prediction of a negative sign, justified by the increasing importance of the accruals driven by growth. This result can be read in the sense that growing firms have more resources to afford conservatism choices that otherwise can be very costly to implement. The same is true for the variable *SIZE*. Its negative sign implies that the political cost hypothesis is not at work for private companies.

Other control variables whose impact on conservatism is interesting to see are *AUDITBIG* and *INSTSHR*. The first one shows that if the firm is audited, more conservatism is induced ($\beta=0,040$, $p<0,01$). This is coherent with the litigation hypothesis in which auditors require more frequently the understatement of earnings rather than their overstatement to avoid the impairment of their reputation. It is interesting to see that such claim is confirmed for private companies and in particular in the case of voluntary audit. Private companies indeed are not mandated by law to have an external auditor. *INSTSHR* accounts for the presence of an institutional investor in the equity capital, as a merchant bank or a private equity. In this case also the coefficient is positive, as predicted, and highly significant ($\beta=0,021$, $p<0,01$). Such particular category of shareholders induces reporting conservatism. This implies the

early recognition of losses and so it is easy for the investor to check the results of investments and take the necessary actions on a timely basis.

LAGLOSS, the variable indicating that the firm suffered a loss the year before, has a coefficient that is negatively related with conservatism, as expected, but not statistically distinguishable from zero. ROA is significantly and negatively related with conservatism, contrary to the expectations. Profitable firms are then less conservative than non profitable ones. As for the variability of earnings, the positive sign of SDROA confirms the hypothesis that the more erratic the trend of earnings is, the higher the tendency to smooth them through reporting conservatism. *GDP* takes into consideration macro-economic factors that can interfere with the decision of reporting conservatively. It correlates positively with conservatism and so the more the economy growth the less firms are conservative and this relationship is logically plausible.

Some final comments can be made on the regression model as a whole. First the standard errors of the coefficients show very low values (not reported). This implies a great similarity across samples of the beta values found. So we can be confident that most samples will have coefficients similar to the ones commented above. This ensures also the significance of the t statistics in that the deviation of coefficients from zero is representative of the majority of all possible samples¹². Another point to notice is relative to confidence intervals of coefficients. They show the boundaries that contain the true value of the coefficients in 95% of hypothetical driven samples. With this respect it can be noted that such intervals are rather small and this indicates that the coefficients found in the analysis are near to true value for the population. Moreover, and in particular for the tax variables, such intervals do not contain zero and so the sign of the relationship is the same across all samples used to build confidence intervals. Finally, the multicollinearity diagnostics show that no serious problems are in the model. The VIF (variance inflation factor) are not substantially greater than one such that bias in the model can arise (Bowerman and

¹² T statistics are indeed computed as the ratio between the observed value of beta and its standard error.

O'Connel; 1990) and no tolerance factor (equal to $1/VIF$) is below 0.2, value indicating the presence of potential problems (Menard; 1995).

5.3. Robustness check

5.3.1. Further analysis

The basic model is computed again using as dependent variable the measure of conservatism of Givoly and Hayn with provisions. Results (untabulated) are basically unchanged.

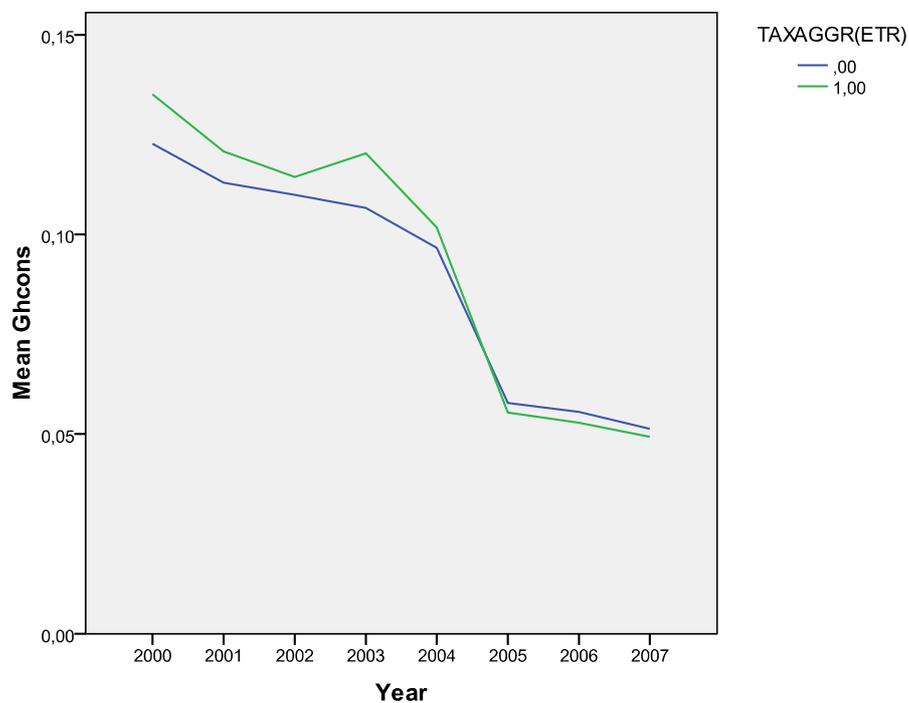
To test if the measure of aggressiveness adopted in the paper really captures the underlying concept, a comparison with the very same measures computed using ETR is made. The long run effective tax rate (Dyreng; 2008) is equal to the ratio between the sum of income taxes over pre-tax earnings computed in more than one year, in this case ten. $TAXAGGR(ETR)$ is an indicator variable taking value one if the effective tax rate of the firm is lower than the first quartile. If the firm is able to keep this rate low over a long period, it can be deemed to be tax concerned. Table 8 presents the Pearson correlation between the measure of tax aggressiveness used in the analysis ($TAXAGGR$) and the one based on ETR ($TAXAGGR(ETR)$). The sign of the correlation coefficient is positive ($r=0,053$) and statistically significant ($p<0,01$, 1-tailed). Even if the coefficient is rather low, the sign indicates that the two measures go in the same direction in identifying the tax aggressive behaviours. This means that the measure developed in the paper identifies the same type of firms. A confirmation is given by graph 6. It shows the time trend in conservatism over time by partitioning the sample using the variable $TAXAGGR(ETR)$. It can be noted that tax aggressive firms show higher conservatism than non-aggressive ones, this being particularly true in the mono rail period. This is the same trend found above using the variable $TAXAGGR$ in so confirming that it really captures the concept of tax aggressiveness.

Table 5 - Correlation between measures of tax aggressiveness^b

		TAXAGGR (ETR)	TAXAGGR
TAXAGGR(ETR)	Pearson Correlation	1	,053**
	Sig. (1-tailed)		,000
TAXAGGR	Pearson Correlation	,053**	1
	Sig. (1-tailed)	,000	

** . Correlation is significant at the 0.01 level (1-tailed).

b.Observations: 15.272

Graph 6 - Evolution of conservatism over time according to tax aggressiveness computed starting form ETR

5.3.2. The subsample of firms with an institutional investor

As specified above, this study relies on data of private companies, mainly to avoid the change in accounting standards occurred for listed firms. With this respect it has to be underlined that private firms in Italy are mainly owned by families or managed by individuals. This obviously makes the difference with respect to the other studies

on the topic that use public companies or where the family nature of the owner does not represent a peculiar character of the population studied. For this reason it is interesting to analyse the situation of a subsample of firms and in particular those ones that have an institutional investor in the share capital. The presence of a merchant bank or a private equity fund represents an important governance issue that influence the management of the interested firms. With this respect differences in financial reporting and even in tax behaviour could occur. In the above analysis emerged that the institutional investor drives reporting conservatism. The explanation is in the necessity to know without delay the results of the investments made by the firm that due to reporting conservatism are recognized early if the result is negative. In table 6 it is presented the regression model tested above, restricted only to firms with an institutional investor. The number of observations is equal to 72 per year with a total of 576 firm-year observations. Table 8 shows results that are basically unchanged with respect to the basic model except for TAXAGGR, representing the tax aggressive attitude of the firm. In this subsample the number of firms labelled as tax aggressive is equal to 40. Even if the result can be due to the reduced dimension of the sample, it can be commented as well. TAXAGGR has a positive sign, as predicted, but the coefficient is not statistically distinguishable from zero. It is as if the presence of the institutional investor induces more discipline in financial reporting in so limiting the role played by the tax aggressiveness of the firm that does not affect conservatism. It is in a way reasonable in that tax aggressive behaviours are usually made in a green area where there are neither clear principles stated by laws nor precise judiciary orientations. This implies also the risk of a tax scrutiny. So the institutional investor, that is interested also in maximizing the value of the firm over time, can require a more disciplined behaviour as for tax issues. On the other side, the role played by the institutional framework represented here by the shift from the mono to the double rail is still relevant and this confirms that it does not depend upon the proprietary structure of the firm.

Table 6- The subsample of firms with an institutional investor in equity capital^{a, b}

Variables ^c	Beta	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
				Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)		4,822	,000	,225	,535		
TAXMONO*	,136	1,901	,058	-,001	,042	,234	4,282
TAXAGGR	,048	,907	,365	-,016	,044	,423	2,366
Taxaggrint	,028	,555	,579	-,028	,050	,478	2,091
Debt	,032	,812	,417	-,018	,043	,763	1,310
Salesgr**	,140	3,828	,000	,026	,082	,892	1,121
Size*	-,091	-1,993	,047	-,014	,000	,569	1,758
CFO**	,282	7,450	,000	,090	,154	,832	1,203
AuditBig	,008	,192	,848	-,016	,019	,677	1,478
Lagloss*	-,070	-1,785	,075	-,027	,001	,779	1,283
Roa*	-,082	-1,816	,070	-,002	,000	,582	1,719
SDRoa	,030	,806	,421	-,001	,003	,879	1,138
GDP**	-,231	-3,240	,001	,000	,000	,234	4,274
Industry fixed effects	added						

a. Dependent Variable: GHcons; Number of firm-year observations: 576

b. Adjusted R square: 0,354; F statistics: 13,372 significant at 1% level

c. ** significant at 1% level; * significant at 5% level.

6. Conclusions, relevance and limitations

6.1. Conclusions and contribution

This paper discusses the consequences of taxation on financial reporting and in particular on the degree of conservatism of earnings.

The general intuition is that the impact of taxation on earnings number can be decomposed into two main factors. The first one is referred as tax institutions and is identified here in the relationship between book and tax income as stated by legislator. It is expected to operate for all firms in a general way. The second factor of influence is represented by tax aggressiveness, that implies the use of the devices allowed by tax laws to reduce the tax burden. This character can be attributed only to given firms.

The attention is put on the beginning on the variation of reporting conservatism over time due to a change in tax laws. It is demonstrated that when the relationship between book and tax income evolves from a tight link to a more definite distinction, conservatism diminishes. More in general, a sharp change in the tax institutional setting determines a variation in the level of observed conservatism. Data strongly support this hypothesis and so tax institutions, and in particular the link between book and tax income, confirm to be an important determinant of conservatism. Such result sheds light on the weight that fiscal laws have on financial reporting and uncovers also the entity of conservatism induced by them. In appreciating the quality of earnings number it is crucial also the consideration of the tax system enforced in the considered environment. This is particularly important in that from the analysis emerges that such factor of influence is common to all firms, despite their attitude toward taxation. So the mechanism stated to compute taxable income is important in the formation process of financial statements. It is important to underline that the mono and double rail systems are used here only as indicators of the institutional setting and it is not directly evaluated their effectiveness as tax models or their goodness in terms of financial reporting quality.

Along with the institutional side, firm based attitude toward taxation plays also a precise role in affecting conservatism. This attitude has been identified as tax aggressiveness, operationalized by considering the behaviour of firms when a tax reduction occurs. The more the firm reacts by shifting accruals across time periods, the more it is tax aggressive. Results suggest that tax aggressiveness is an autonomous driver of reporting conservatism and operates autonomously even if the relationship between book and tax income is explicitly taken into consideration. It is worth remembering that tax aggressive behaviours are made possible also because the analyzed environment is characterized by grey areas that can be used strategically by firms to obtain tax savings. In the same time, the lack of clarity in tax laws leaves open the risk of a tax scrutiny and so tax aggressiveness implies also the assumption of a given level of risk.

As explained, both tax explanations for conservatism play an autonomous role. Tax institutions and tax aggressiveness are both responsible of the observed level of conservatism and each effect is theoretically and empirically distinguishable. The role played by taxation is then far more rich and complex than how it has been addressed up to now. This does not exclude an interaction between tax institutions and tax behaviours and the paper shows that when the link between taxation and financial reporting is tight, the impact of tax aggressiveness on conservatism is reinforced. In this case the mechanisms stated to compute taxable income act as the gateway of tax behaviour on earnings.

This paper contributes the literature on tax accounting in different respects. This is the first study that analyses the change in conservatism over time using as the main explanatory driver a tax factor, represented here by a change in legislation. There are no studies on such topic and none of them assumes as determinant of conservatism the relationship between book and tax income as shaped by the legislator. The results founded confirm the importance of taxation in conservatism studies. The second contribution is in the joint consideration of institutional and firms based determinants of taxation. Each of them has its own role in explaining conservatism. Until now taxation, as driver of financial reporting, has been considered only in one or the other way but they have never been considered in conjunction.

Finally, the paper provides a contribution in developing a new measure for tax aggressiveness by leveraging the reaction of firms to an external tax stimulus, represented by a tax reduction. This adds a new piece of evidence to a relatively unexplored field, that is the measurement of the tax attitude of the firm by using financial statements data.

6.2. Relevance and limitations

The analysed topic is of relevance under different respects. This paper provides one of the first empirical evidence on the impact that the relationship between book and tax income has on reported earnings. Many deductive studies have been delivered on the features of mono or double rail and their consequences on financial reporting but no empirical evidence has been provided up to now. Here it is shown that such tax mechanisms deeply affect earnings and in particular the mono rail leads to more conservatism, the effect being common to all firms. This provides a useful evidence to evaluate which legal framework is preferable according to the goals pursued by regulators. Another point to notice is relative to conservatism. Without entering the debate if this attribute of earnings is preferable or not, it is clear that taxation is an important determinant and this is true in particular when the effects of the classic drivers of conservatism due to the contractual hypothesis are weak. It can be said that tax institutions in a sense play a substitutive role in that they drive a level of conservatism that otherwise wouldn't occur. This is confirmed by the reduction of conservatism during the double rail period. It is up to tax legislator but also to financial statements regulator to evaluate the pros and cons of this role of taxation. On one side, conservatism induced by taxation can have also positive side effects for those constituencies that have not the contractual power to induce it. On the other side it cannot be excluded that the resulting level of conservatism is such that the reality of underlying operations is disguised.

For financial statements users, the partition of taxation into institutional and firm specific determinants can be also of relevance. An earnings number can be evaluated differently if conservatism is due to an external legal constraint (tax mono) or to firm specific factors. In general, the knowledge of the tax system enforced is very important in appreciating the characters or earnings. Moreover, the fiscal attitude of the firm is relevant to evaluate how the trade off between financial reporting and tax minimization is solved and what is the resulting effect on conservatism.

The paper presents however some limitations. The definition of tax minimization adopted here is strictly linked to financial reporting. So the type of tax behaviour captured by the paper passes through financial statements. Tax reduction activities that don't affect earnings number are not detected in this study and so there can be operations that, even if relevant in term of tax reduction, are overlooked by the study. The sample used is composed by the same private companies taken over a decade. This on one side grants a more effective comparison in the before-after dichotomy but on the other side a problem of survivorship bias might arise. The analyzed firms was successful until the end of the sampling period and this can lead to optimistic results because firms that didn't survive or started their activity over the decade taken into consideration are overlooked. It has to be underlined that financial statements of private firms have not the same relevance of the ones published by listed firms. A way to make more comparable this study with the extant literature is to look at firms with an institutional investor in the share capital. In this case the financial reporting process is more disciplined and more comparable to the situation of listed firms. With this respect what emerged is that the institutional driver of taxation is of relevance in influencing conservatism, in so demonstrating that it operates at a general level. In the same time emerges that tax aggressiveness is no more determinant in inducing conservatism. This can be seen as a constraint put by the institutional investor on the tax minimization strategy of firms that can be characterized by an aggressive tax planning and by the exposure to tax scrutiny risks. Another element not explicitly taken into consideration is the possibility that some firms face credit restrictions. So at a given level of interest rate they are unable to raise the amount of funds they need for their activities. This can affect the tax minimizing behaviour in that it represents an important side cost. Firms with credit restrictions can deem tax minimization and the consequent induced conservatism as not functional to the strategy of raising funds. In this sense the reduction of earnings is not in line with the policy to show a financial position that can attract potential lenders. So such type of

firms reasonably are less tax aggressive than others and consequently less conservative in financial reporting.

Another limitation is represented by the analyzed setting that could produce relevant effects on results. In particular, Italy is a country with high tax burden and with a complex and some time contradictory tax legislation that leaves opened many area of uncertainty that can be used strategically to obtain tax savings. Moreover, the framework is characterized by a generalized tendency toward tax evasion. Even if it is not the focus of the paper, it has to be considered also that tax strategic behaviors are usually driven also by personal taxes and in particular those ones giving fiscal advantages for example on capital gains or facilities on the import of capital deposited abroad. The impact of personal taxes on what has been observed cannot be ruled out completely. Finally, as outlined above, the interference of other income taxes can be important. The so called IRAP indeed created the incentive to not lower income under a given level to avoid reporting a loss and in the same time favored the incentive to increase pre-tax income to reduce the tax burden, this being particularly true in the double rail period. Even if the time trend of effective tax rate does not show relevant change after the introduction of the double rail, it is important to keep in mind this possible interference.

Moreover, other systematic factors affecting conservatism as capital market pressure, the efficiency of contracting and the effectiveness of the judicial system are quite weak in Italy even if, with respect to the last point, the level of penal relevance of many tax crime is relatively low. So the impact of taxation on conservatism may be different in more dynamic environments.

Earnings management in view of a planned tax rate reduction: listed vs. private firms

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Earnings management in view of a planned tax rate reduction: listed vs. private firms

1. Introduction

1.1. Overview of the topic and research question

A fertile occasion to study the tax policies of firms is represented by a planned reduction of tax rate. Indeed, the first study on tax accounting was delivered when in the 80s tax rate cut passed in the US (Scholes, Wilson and Wolfson; 1992)¹³. This setting is very effective to isolate the tax behaviour of firms in that the trade off between tax minimization and other relevant reporting issues is sharper than usual and easier to identify. It is acknowledged that managers, in preparing financial statements, have a given range of discretion in choosing valuation criteria. The resulting reporting choices, other than making financial statements a clear mirror of the underlining activities, are also influenced by other factors that are able to deeply affect reported earnings and one of them is taxation. It influences financial reporting because managers can pursue tax goals in preparing this document and this is evident in cases where tax interferences are explicitly allowed by the legal system. This is just the case of the setting analysed in this paper. Given that the legal system allows valuation and recording criteria with tax only justification directly in financial statements, such document can be used to understand the tax behaviour of firms.

The idea of this paper is to analyse the reaction of firms to a planned tax reduction by using a measure of earnings management. The joint consideration of two institutional features, namely the planned tax reduction and the tight link between book and tax income, ensures that accruals are deeply affected by taxation. The main explanatory factor used here is the listing status of the firm, as described more in details below.

¹³ The tax rate for corporations dropped from 46% to 34% in the period 1986 – 1988.

The point is to understand if a different behaviour, in terms of tax based earnings management, characterizes listed vs. private firms.

With this respect, it is well known that the benefits of a tax reduction need to be compared with the costs that they usually generate. In some cases the latter can be such that tax minimization is not pursued any more (Shackelford & Shevlin; 2001). There are some evidences showing that private firms are more tax aggressive than public ones because they have lower reporting constraints (Cloyd, Pratt and Stock; 1996; Mills and Newberry; 2001). However, such results hold in the US setting where listed companies face a high capital market pressure, have a widespread ownership and financial reporting is independent from the tax system. If the same analysis is made in a different setting where these three conditions are not met, it is possible that the duality listed/private with respect to taxation can lead to different results. Indeed, the existence of reporting constraints do not necessarily implies that tax minimization is a secondary issue for public firms. In particular, the setting that characterize this paper presents ownership structures with high concentration, a tax system that deeply affects financial reporting decisions and a capital market that does not exercise a high pressure. Given this, it is no more obvious that the duality public/private firms with respect to tax behaviour is the same found by extant literature.

The scenario used in this paper is a planned tax reduction that gives firms the possibility to obtain tax savings by an intertemporal shifting of income. Given this, the research question is as follows:

In case of planned tax reduction, what is the behaviour of listed firms in terms of earnings management as compared to private firms?

1.2. Findings and contribution

This paper provides evidence on the reaction of firms to a change in the tax rate by comparing listed and private firms. The setting in which this analysis is made is quite different from the previous literature.

In this case the two types of firms are similar with respect to ownership structure, are subject to a tax system where book income is deeply affected by tax issues and capital markets do not exercise a high pressure. This particular environment, common to many European countries, determines a different set of tax incentives. What is found indeed is that listed firms engage more in the shifting of accruals over time as compared to private firms. Such result, quite new if compared to the literature, demonstrates that the common wisdom on the low tax concern of listed firms is contingent on the environment in which results are obtained and it is not universally valid. When ownership structure is concentrated across all types of firms and the tax system mandates a tight link between book and tax income the only difference between listed and private firms is in their capacity to take advantage of the tax rate change. This attitude is more developed in listed firms that usually have dedicated offices to put in place an effective tax planning and so are more able to plan the timing of operations to obtain tax savings.

The result found shows that institutional devices, as ownership structure and tax system, deeply influence the observed tax behaviour and the lower tax concern of listed firms documented up to now does not depend on listing status per se but on the institutional devices that shape incentives and constraints.

2. Literature review

The tax accounting literature that is of relevance here can be partitioned into two groups. The first one is about reporting incentives created by a change in the tax system. The second stream of literature deals with the relationship between ownership structure or listing status and tax incentives. By jointly considering these

two lines of research, it is possible to hypothesize the behaviour of firms in view of a tax reduction, in the light of their listing status.

2.1. Intertemporal income shifting

A change in the tax system usually gives firms the opportunity to obtain tax savings by shifting income forward or backward over time. According to the observed behaviour, it is so possible to see if the tax incentive has a predominant role or if other and opposite constituencies prevail. The first study addressing the question of how firms react to a planned tax reduction is the one of Scholes, Wilson and Wolfson (1992) which analyse the situation of the US after the tax reform act passed in 1985. Due to the reduction of tax rate from 46% to 34% over two years, firms could profit of more deductions when the rate was higher and of tax savings when the rate decreased. Firms reacted by shifting income over time even if this is not observed in all companies. Authors argue that other factors can impede the shifting of income from one period to the other. For example, the acceleration of costs can reduce the operational efficiency of the firm or deferring revenues can create frictions with customers. Such reporting costs are explicitly considered by Guenther (1994) whom, extends the study of Scholes et al. and analyses accruals rather than tax savings to observe the reaction of firms in the same scenario of tax reduction. To do this reporting costs are explicitly taken into consideration and identified in proxies as size, level of debt and managerial ownership. The year before the tax reduction large firms engage more in income decreasing earnings management than small ones because they are subject to political costs and so have more incentives to show a low taxable income. On the other side, the entity of earnings management is reduced when the level of debt is high because in this case more discipline in financial reporting is required. In this sense, the willingness of the firm to avoid the violation of debt covenants prevails on the opposite tax incentive. In the same line is the study of Lopez et al (Lopez, Regier and Lee; 1998) which analyses the conflict between tax and financial reporting issues in case of a planned tax reduction by using as

explanatory variable the prior tax aggressiveness of the firm measured using an index built on the difference between actual and theoretical tax burden. This factor proves to be an important driver of the observed income decreasing earnings management. In particular, tax aggressive firms will accelerate costs more the year before a tax reduction.

Another interesting setting used to analyse income shifting is represented by the introduction of the alternative minimum tax in the US during 1986¹⁴. Such tax mechanism required book income to be part of taxable income from 1987 to 1989. The resulting tight link between book and tax income gives the opportunity to analyse in depth the trade off between tax policies and reporting incentives. This mechanism indeed raised the possibility to shift income back to 1986 or forward beyond 1989 to obtain tax savings. Evidence shows that alternative minimum tax (AMT) deeply affects earnings in that it constitutes a strong incentive to downward them (Gramlich; 1991). This is particularly true the year before the introduction of such a mechanism, in that firms have the incentive to accelerate earnings to avoid the AMT. Several studies empirically show that firms shifted income from 1987 to 1986 (for all: Dhaliwal and Wang; 1992; Manzon; 1992).

What lacks in these types of studies is the consideration of the listing status of the firm as a possible driver of the observed tax behaviours. Given the different environment in which listed and private companies interact, it is possible that the incentives created by a planned tax reduction receive different attention from the two groups. If this is the case, the listing status can be considered as an explanatory factor of income shifting patterns.

¹⁴ Without entering in detail, AMT was equal to the difference between tentative minimum tax (computed as mandated by tax law) and regular taxes.

2.2. Tax incentives

The second segment of literature useful to address the research question presented above, deals with tax driven reporting incentives considered outside the case of tax rate reductions. In particular, the focus is here on the tax behaviour adopted by manager and their impact on financial reporting.

According to Ronen and Aharoni (1989) accounting choices of managers, and in particular income increasing policies, are affected by taxation via the compensation mechanism implemented. With an analytical model they demonstrate that management compensation is linked to stock prices whose level is largely determined by the assessment of future cash flows made through financial statements. Given that a change in tax rates affects cash flows, managers will react to such change in a way that their compensation is maximised. An increase in tax rate is then followed by income increasing accounting policies. Similarly, John et al (John, John and Ronen; 1996) with an analytical model shows that managers of firms with high future cash flows adopt accounting choices to increase income despite potential tax consequences, to convey information to the market about future prospects.

The impact of taxation on reporting choices has also been addressed empirically by Cloyd et al (Cloyd, Pratt and Stock; 1996) that focus the attention on the possibility that managers conform financial reporting with tax rules (conformity) when the latter are ambiguous. This reduces the probability of litigation with tax authorities and increases the likelihood of successfully defend the adopted choice. What emerges is that conformity, despite the tax savings it produces, is not pursued when no-tax costs are high (e.g. capital market consequences, debt covenant violations). With this respect, public firms, in incurring higher no-tax costs, are found to be less inclined to choose conformity than private ones. Mills and Newberry (2001) generalize the study of Cloyd et al and analyse the overall reporting decisions of the firm as reflected in book-tax differences¹⁵ considered as a general proxy of the attitude of managers to

¹⁵ Computed as the difference between earnings and taxable income.

align reporting and tax decisions. It is found that public firms present higher book-tax differences than private ones, in so demonstrating that they face higher no-tax costs. Moreover, in private firms it is the level of issued debt that affects tax decisions. The same is true for financially distressed firms. In such cases, no-tax costs prevent tax reduction activities, in so generating greater book-tax differences. The relationship between ownership structure and tax behaviour is also analyzed by Klassen (1997). The focus here is on cross sectional differences in financial reporting costs and their impact on the trade off between tax and no-tax considerations. Ownership concentration is used as proxy of reduced market pressure and when it is high, managers are able to communicate more easily firm's value to the market by using avenues different from financial reporting. In these cases, firms are more likely to implement transactions that produce tax savings. The paper shows that firms with low ownership concentration realize larger gains or smaller losses in asset divestures than firms with high ownership concentration thus demonstrating that a high market pressure will reduce the attitude to pursue tax reductions. Another relevant study on tax incentives is the one of Desai and Dharmapala (2006) where the trade off between firm value and tax avoidance is made explicit. The governance structure of the firm is also taken into consideration. What emerges is that incentive compensations are such that tax sheltering is reduced, and in this way the diversion of resources that is typical of such activity. This uncovers a complementary relationship between tax sheltering and managerial diversion.

The reviewed studies give very limited and partial evidence to the different tax behaviour of listed and private firms. The role played by ownership structure, market pressure and tax system are in a way taken for granted and not always directly addressed. So there is the possibility that a change in one or more of these elements could lead to rather different results. The aim of this paper is just to give a different perspective on the tax behaviour of listed and private firms using a setting of tax rate reduction.

3. Hypothesis development

3.1. Premise

The limited empirical evidence on the different tax behaviour of firms according to the listing status concludes that public firms are less tax concerned than private ones. The reason is identified in side costs arising from a reduction of earnings made for tax reasons whose weight is sometimes relevant. Reporting constraints that are the main source of side costs are of different nature. The diluted ownership structure typical of publicly traded firms lead them to choose more income increasing accounting policies than private firms with reference to depreciation, inventory valuation and tax credit accounting (Penno and Simon; 1986). Information asymmetry and agency costs determine the decision of public banks to manage earnings by selling securities more than private ones do (Beatty and Harris; 1998). Managers of widely held firms select more likely FIFO to evaluate inventories, in that such criterion increases earnings and so manager compensation (Dyl; 1989). Firms with high managerial ownership¹⁶ engage less in earnings management because managers have not to deal with contractual limitations and constraints that usually lead to aggressive accounting choices (Warfield, Wild and Wild; 1995). These are some examples of side costs. The point is that there exists issues as compensation mechanisms, ownership structure and market pressure that can prevail over the tax argument in shaping accounting choices. It is important to underline that those studies report the evidence of firms that operate in a very specific environment and are considered in their day by day activities. With this respect, some considerations are worth making.

No-tax costs responsible of the lower tax concern of public companies are mainly due to the control devices used when ownership is diffused and managers act in a rather independent way. When ownership is widespread and companies are then manager-controlled, shareholders rely on formal mechanisms, expressed in terms of

¹⁶ Intended as the share capital of the company held by managers.

earnings numbers, to control managers and evaluate the performance of the firm (Cloyd, Pratt and Stock; 1996). For example, earnings can be used to structure compensation contracts. In this way earnings gain importance for both managers (in terms of their compensation) and shareholders (in terms of market value of the firm) and the former usually have the incentive to adopt income-increasing accounting policies (Penno and Simon; 1986). In such framework income decreasing policies due to tax reasons are not pursued because they are too costly to implement in terms of side costs. Lower earnings can indeed harm the compensation level of managers or the market value of the firm because shareholders rely quite exclusively on them. So the duality between public and private firms on which the tax behaviour is analysed, is based on the difference in the ownership structure. Public companies are identified with manager-controlled firms having a widespread ownership structure and private companies coincide with owner-controlled firms with concentrated ownership and a few key investors that exercise control. The result on the lower tax concern of public firms is then contingent on this partition. Given that owner-controlled firms are less likely to adopt income increasing earnings management (Dhaliwal, Salamon and Smith; 1982) in so leaving the room to adopt tax reduction choices, it is interesting to see what happens if listed companies also present a concentrated ownership structure. In this sense it is possible that the observed tax behaviour is affected in a way. Another element on which the tax studies quoted above rely is the capital market pressure. The participation to capital markets imposes greater constraints on earnings because they represent a primary source of information and determine the market value of the firm. This gives the incentive to weight more income increasing policies (Cloyd et al; 1996). With this respect, it is acknowledged in the literature that the role of capital markets is not the same across countries. There are cases in which capital markets are large and efficient and situations where they are less developed. It is clear that the pressure on earnings number in the two outlined situations is different. In particular, there are evidences that when capital markets are large and efficient, the level of earnings management decreases (Leuz et al; 2003). This uncovers the possibility that a low capital market

pressure leaves more room to earnings management and in particular to tax policies.

The third element that characterizes the extant evidence on the duality listed vs private firms in terms of tax behaviour is represented by the enforced legal tax system. The reviewed studies consider the US setting where book and tax income are quite completely independent. The two systems are governed by specific set of rules and very few links exist between financial reporting and taxation. In such scenario there are not evident motivations to conform financial reporting to tax rules in that tax minimization can be pursued directly in fiscal declaration without affecting earnings. The motivation that justifies the decision to conform financial reporting to tax choices is identified with the risk to suffer a tax audit. In other words, when conformity is not adopted with respect to a specific evaluation issue or more in general, when book and taxable income are very different, this is an index of aggressive tax planning that can raise the attention of tax authorities. This is true in particular in the US where the Internal Revenue Service instructs its examiners to reconcile book and tax income as the first step to find the existence of a possible tax shelter activity (US Department of Treasury; 1999). So conformity decisions are justified in terms of lower tax scrutiny costs or as the possibility to better defend reporting choices in case of tax audit. A point to notice is that such kind of tax costs are mainly due to the risk of a tax scrutiny and the consequent higher tax income that can be ascertained by tax authorities. As a matter of fact, these costs are not certain and depend on the probability that a tax scrutiny is put in place. The point is that the tax costs considered in the literature are strictly linked to the US context and the tax policies implemented there. Moreover, the trade off between taxation and financial reporting relies on types of costs that are not comparable in terms of their immediate consequences. Not necessarily outside the US the tax audit is based on the very same criteria. This opens the possibility that a different incidence of tax costs can lead to another response of firms to the tax stimulus.

Given these premises, it is now possible to clarify what is the hypothesis that will be tested and the assumptions on which it is based.

3.2. The hypothesis and its motivations

The hypothesis that will be tested in the paper is the following:

H. In case of planned tax reduction, listed companies will have a greater change in non-operating accruals than private companies.

The hypothesis rests on some important characteristics that is worth explaining in details.

The planned tax rate reduction is a fertile setting to assess the fiscal behaviour of firms because it sharpens the trade off between tax and no-tax incentives. For example, the smoothing of earnings to fulfil market expectations goes against the policy to reduce the tax burden. Similarly, earnings management not to violate debt contracts can result in higher taxes (Lopez et al; 1998). The final choice depends on which of the two constituencies is deemed to be more important and worth pursuing. A planned reduction in tax rate makes clear what the prevailing interest is. In particular, it offers the opportunity to reduce taxes in two ways: First, by accelerating the recognition of costs the year before when the tax rate is higher, in so increasing the benefits of deduction, and second by postponing revenues the year after, when the rate is lower (Sholes et al; 1992). The behaviour of firms are here analysed in terms of earnings management and in particular by using accruals, that are all the variations made to cash flows to obtain net income. A large part of these accruals are estimated at the end of the year and so during the preparation of financial statements. The focus is on non-operative accruals, as operationalized below, that encompass all accruals that do not arise from the core activities of the firm. This portion of accruals is not directly related to the day-to-day operations of the firm and in particular with the level of working capital. Non-operating accruals are mainly

composed by non-monetary costs that do not arise from an exchange with third parties but are of estimated nature. Examples are provisions, amortizations, capital gains and losses, accrual and capitalization of expenses, deferral and recognition of revenues. Such costs have a common denominator: their amount and timing is at quite total discretion of managers and they are mainly tax relevant in that they are deductible or taxable. For this reason they are deeply affected by tax considerations because the level and the timing of their charge in income statement affect the amount of tax paid. The expectation in this case is that the year before the tax reduction, when the tax rate is higher, negative accruals will prevail in so generating a substantial tax saving. The year after, positive accruals are expected because they face a lower taxation. The joint consideration of these two trends leads to the prediction of a positive change in accruals over the two years of the tax rate reduction. This means that if firms put in place an effective tax planning, the observed change in accruals should be positive. The higher the change the more the firm is tax concerned. So firms showing this trend can be considered as tax concerned, even if in different degrees.

Another important element to notice is the use of a different framework as compared to the literature. Each element of difference is briefly explained below in term of the possible effects in terms of different tax behaviour.

A first point of difference is the concentration of ownership that characterises both listed and private firms. It follows that the importance of reported earnings as control mechanism of managers' performance is in a way reduced. This happens because when public firms are not manager-controlled, earnings are not the only formal mechanism to supervise what managers do because other informative channels are available (Klassen; 1997). The pressure on earnings is then considerably attenuated and tax issues get relatively more importance. The second relevant issue is relative to capital markets. When they are not large and efficient the usual income-increasing practices (Albarbabbell & Lehavey; 1999) are less compelling and this leaves room for tax policies in that side-costs are reduced. The last issue is on the legal system. If

book and tax income are tightly linked and so tax minimization passes through financial statements, the importance of tax incentives increases a lot because the trade off with no-tax costs changes in importance. The choice not to adopt tax rules in financial reporting does not increase the risk to suffer a tax scrutiny but, more directly, it implies higher taxes to pay. So the comparison between an immediate tax cost and less certain consequences as capital market reactions are, could give more importance to the tax argument.

Given that both listed and private firms face the same tax framework and have a concentrated ownership structure, it remains to clarify why they could behave differently with respect to taxation and in particular in the case of a tax rate reduction.

According to the arguments made above, public firms have not less reasons to be tax concerned as compared to private ones. The tax framework is the same, ownership structure is concentrated and market pressure is not so compelling. The hypothesis here is that listed firms are not less concerned than private ones with respect to tax minimization, but they pursue this goal using different strategies.

Private firms do not face stringent reporting constraints in terms of timing and quality of financial information. In the relationship with lenders (usually banks) financial statements is not the only source of information about the situation of the firm. The tight link between lender and borrower usually gives the former more confidential and timely information channels than financial reporting. This implies that private firms can minimize taxes without the risk of suffering side costs due to lower reported earnings. So tax minimization can be pursued over time by charging in income statements costs with the only reason to deduct them and by aligning some reporting choices to tax rules.

In the case of public firms, even if the pressure on earnings by capital markets is less severe than in the context analysed in the literature, it remains true that they gain more visibility and attention from the financial community than private firms. This is reflected in the production of periodical information to the market, more frequent than

annual reporting, and in the surveillance by market regulators. So a systematic downward reduction of earnings for tax only reasons, as played by private firms, is untenable. However taxes are also contained by listed firms. What changes with respect to private firms is the way in which tax savings are obtained. The hypothesis is that public firms put in place a more effective tax planning than private ones and this allows them to take advantage of all the possibilities contained in tax laws to reduce the tax burden. The motivation of this statement is a consequence of the status of such type of firms. Listed companies have developed the attitude to deal with external stakeholders in a systematic way, that is through specific organizational resources. In other words, as the disclosure to the financial community is made through dedicated offices, the same is true for the more important stakeholders. The Government in claiming taxes is one of them. So public firms deal with taxation in a systematic way and use instruments and procedures that are not usually available to less sophisticated organizations as private firms usually are. In the specific case, when a tax reduction occurs, public firms can pursue tax savings goals by using effectively timing differences (Arnedo et al; 2007). In this sense listed firms have a greater capacity than private ones to shift over time costs and revenues to reduce taxes. Given that the tax reduction analysed in this paper has been announced about two years before it became effective, firms had the possibility to plan the timing of those operations with greater tax relevance to reduce taxes.

Contextualizing all the arguments made above, the expectation is that listed firms will benefit more than private ones of the tax rate reduction. Consequently they will charge higher negative accruals the year before the tax change and more positive accruals the year after, in so determining a greater change as compared with private ones. The use of the delta accruals allows at capturing in a synthetic and effective way the tax behaviour of firms. The hypothesis that will be tested is as follows:

It has to be clarified that such hypothesis does not imply that private firms are not tax concerned. The attitude to use all the opportunities allowed by tax laws to lower the tax burden can be attached to both public and private firms. In both categories there

are subjects that react more to the tax issue and others that are less concerned. It depends on how the trade off between tax savings and the related side costs are evaluated and solved in the single firm. For this reason the expectation is that in both groups the firm-based tax attitude plays a role and it is important to control this aspect.

Other than this, the point raised by this paper is that listed firms pursue tax saving in different ways as compared with private ones and in case of tax reduction the latter are less organized to plan the timing of tax related operations.

Another point to clarify is that listed firms still face reporting constraints that limit their possibility to make income decreasing earnings management. Moreover, tax minimization can also pass through avenues that are different from the accruals manipulation.

4. Methodology

4.1. Sampling

For the analysis a matching sample of Italian listed and non-listed firms is collected in the years 2002, before the tax reduction, and in 2003, the year after, in order to compare the level of earnings management in the two years. In this period the so called single track basis was enforced. It allowed the adoption of evaluation criteria and the charge of costs with fiscal only justification in financial statements. This implies that accounting choices are influenced by taxation and the activities pursued to reduce the tax burden have important effects on the earnings number in terms of entity and nature of its components.

As for tax rate, until 2000, in Italy companies were taxed at the rate of 37% (the tax is called IRPEG). The tax law for 2001 (legge 23/12/2000 n. 388) decided a reduction of tax rate of 2% in the period 2001-2003. In particular, the tax rate for 2001 and 2002 was predicted to be of 36% and the one of 2003 of 35%. The fiscal law for 2003

(legge 23/12/2002) decided a further reduction of the tax rate from 35 to 34%. So in 2002 a reduction of one basis point was predicted since 2000, a further cut by one basis point in the end of 2002. The following table reports the tax rates enforced in the different years.

Year	Laws stating tax reductions and period of enforcement	Tax rate
2000	23-12-2000 for 2001 and 2002	37%
2001		36%
2002	23-12-2002 for 2003	36%
2003		34%

More recent data are not suitable. Another tax reduction occurred in 2004 but in that occasion new rules were established on the relationship between book and taxable income. This clearly represents a confounding factor in the analysis of tax behaviour. Moreover, in 2005 international accounting standards became compulsory for public companies and this creates disturbing effects as well as the difficulty to compare public and private firms, the latter still subject to Italian accounting principles.

The matching sample is built by taking for each listed firm, whose data are available, a corresponding private one comparable for size and industry code. The size is computed in terms of total assets and the industry code used is the ATECO six digit code. This grants that private and public firms are of the same size and sector in so allowing a more effective comparison. The sample, that contains firms belonging to all sectors, banks and financial intermediaries excluded, is made up of 178 public

firms whose shares are listed at the Italian stock market, and 178 private firms. The following table presents the sample selection process.

Type of firms	LISTED	NON-LISTED
Observations, excluded financial companies and banks	239	1647
Observations eliminated because non matched	5	1469
Observations eliminated due to missing values	56	
Final sample	178	178
with positive change in accruals	70	66

In the analysis, financial statements of the single firm are used. This decision is motivated by the uncertain meanings that taxes have on consolidated financial statements where they represent the sum of all subsidiaries taxes plus the latent taxation arising from the consolidation process. Moreover, financial statements of the group have no fiscal relevance and so their values cannot be affected by fiscal motivations.

4.2. Operationalization of variables

4.2.1. Earnings management

The hypothesis to test is expressed in terms of accruals, the portion of earnings not due to cash flows and so easier to manipulate (Dechow, Sloan and Sweeney; 1995). The accruals manipulation does not change the level of current operations but their timing. In this way it is possible to accelerate or postpone the recognition of earnings. Accruals are also affected by real operations in a way that cannot be influenced by

managers. For this reason earnings management is identified with discretionary accruals representing the portion of accruals not mandated by accounting principles.

In this paper the attention is put on non-operating accruals computed according to Givoly and Hayn (2000). Total accruals can be divided into operating i.e related to working capital, and non-operating i.e including depreciation, amortization, provisions¹⁷, assets write-downs, capital gains and deferral of revenues. Such portion of accruals is deeply affected by tax issues in that it presents a high degree of discretion. The adopted measure is as follows¹⁸:

$$OPACC = \Delta ACCOUNTS RECEIVABLE + \Delta INVENTORIES + \Delta PREPAID EXPENSE \\ - \Delta ACCOUNTS PAYABLE - \Delta TAXES PAYABLE$$

$$TACC = NET INCOME - CFO$$

$$NOACC_t = TACC_t - OPACC_t$$

Where *OPACC* are operating accruals, *TACC* are total accruals and *NOACC* is the measure of non-operating accruals, computed as the difference between total accruals and operating accruals. Given that the hypothesis is expressed in terms of delta accruals, the difference between accruals of 2003 and 2002 is computed for each company. Accruals have been previously scaled by lagged total assets. So the resulting measure is as follows:

$$\Delta Accruals = \frac{NOACC_{2003}}{Total Asset_{2002}} - \frac{NOACC_{2002}}{Total Asset_{2001}}$$

$\Delta Accruals$ is then winsorized in the 1st and the 99th percentile to avoid the disturbing effect of extreme values.

¹⁷ Excluded provisions for bad debts, included in working capital.

¹⁸ Where Δ is the difference between the variable at time 't' and at 't-1'.

4.2.2. Control variables

The determinants of the change in accruals are of various nature and type. Some of them are taken into account along with the listing status of the firm.

The first important driver of income shifting to take into account is the tax aggressiveness of the firm.

With this respect it is important to check if this character is different or overlaps fully or partially with the listing status. Firm based tax aggressiveness is computed using effective tax rate (ETR) equal to the ratio between income taxes and pre-tax income. To capture the real attitude of the firm towards taxation rather than a transitory phenomenon, ETR is computed using data of more than one year. This grants that peaks or disturbing events are smoothed and the observed rate is not due by chance (Dyreng; 2008). The effective tax rate is computed over a decade, as follows:

$$ETR = \frac{\sum_{t=1999}^{2009} INCOME\ TAXES_t}{\sum_{t=1999}^{2009} PRE - TAX\ INCOME_t}$$

Such measure is the real tax rate faced by the firm in that the numerator represents the amount of taxes charged in income statements according to the level of taxable income and the denominator is equal to the income computed for financial statements purposes. Tax aggressiveness (TAXAGGR) is computed as a dummy variable taking value 1 if ETR is lower than the first quartile and zero otherwise, following what has been made by Lopez, Regier, Lee (1998) with their measure of tax aggressiveness. The idea is that if the firm has been able to contain the tax rate for a long time period, this is a consequence of its careful tax policy aimed at making use of all the avenues allowed by laws to obtain tax savings.

Another control that can affect income shifting is the existence of a group. It is reasonable to hypothesize that if the firm belongs to a group of firms, in the position of holding or subsidiary, its fiscal policy is in a way affected. Groups are usually characterized by greater organizational complexities. Dedicated offices are at work to

plan at best the flow of resources among companies and this affects functions as production, selling and financing. It is reasonable to hypothesize that taxation is also affected. A central tax planning made at the level of the holding company affects all the operations among the firms of the group and is able to determining relevant consequences on the tax policy implemented by the single firm. This variable due to data constraints is computed by looking at infragroup receivables of both short and long term. If receivables vs. subsidiaries and holdings are greater than the mean in the years 2002 and 2003, the variable takes value 1, zero otherwise. If among the firms of a group operations occur with frequency, it is reasonable that this financial statements item is not equal to zero.

Some control variables are then added in the analysis to take into consideration other factors that influence earnings management which also represent sources of no-tax costs.

The size of the firm can affect the level and the willingness to engage in tax reduction activities and is a proxy of political costs (Watts and Zimmerman 1986). Big firms, due to their high visibility, tend to report lower earnings to avoid different types of costs, not necessarily of monetary nature. Examples are the risk to be engaged in an antitrust procedure, higher visibility to tax authorities or greater conflicts with trade unions. This leads to an increase in negative accruals.

Another variable of interest is debt which represents a typical financial reporting constraint. Debt contracts, to protect lenders against undesired actions of borrowers, often contain covenants linked to financial reporting data. These are expressed in terms of thresholds not to violate, e.g. a minimum ROE to maintain for the duration of the debt or limits are imposed on investment activities or dividend policies. A natural consequence is that firms are concerned with the violation of such covenants, because they usually imply more expensive conditions or heavy costs (DeFond and Jiambalvo; 1994). So in reporting earnings, managers try to satisfy covenants by engaging in income increasing earnings management. But it is also true that lenders

usually require more conservatism to improve contracting efficiency. It leads to a timely recognition of losses arising from investments with negative net present value and this, other than preventing investors from financing bad projects, let them know the real performance of operations (Ball and Shivakumar; 2005). So it is difficult to anticipate which effect will prevail.

Control variables recommended by the literature on earnings management are cash flow, whose relationship with accruals is negative (Dechow; 1994) and firm growth, in that accruals are positively related to the growth of the company (Johnson et al; 2002).

4.3. The model to test

The different reaction of listed and private firms to a planned tax reduction is tested using the following model:

$$\Delta Accruals_t = \alpha + \beta PUBLIC + \gamma TAXAGGR + \delta GROUP + \zeta \Delta DEBT + \eta \Delta SIZE + \theta \Delta CF + \iota \Delta ROA + \kappa AUDIT + \lambda SALES GROWTH + \mu LOSS + \varepsilon$$

Consistent with the nature of the dependent variable, independent variables, where possible, are put in terms of change between 2003 and 2002 values.

Variables are defined as follows:

$\Delta Accruals_t$: is the change in scaled non-operating accruals computed following of Givoly and Hayn;

$PUBLIC$: is an indicator variable taking value 1 if the firm is listed and zero otherwise. The predicted sign is positive because public firms are more able than private ones at changing the timing of operations. Benefits from the tax rate reduction are obtained by charging lower accruals the year before and higher accruals the year after in so generating a greater change in accruals in the two periods considered (H);

TAXAGGR: is a dummy variable taking value 1 if the ETR of the firm is lower than the first quartile, and zero otherwise. It summarizes the tax attitude of the firm and the relationship with income shifting is expected to be positive. The more the firm is tax aggressive, the higher will be the change in accruals;

GROUP: it is equal to 1 if the mean of infragroup receivables of the firm computed in 2002 and 2003 is greater than the mean and zero otherwise. The sign is expected to be positive. Groups are able at plan in the best way the shifting of income to benefit from the tax rate reduction;

ΔDEBT : is the change in the amount of outstanding financial debt. It encompasses both bonds and bank debts. Commercial debts are excluded. The relation with accruals is ambiguous. On one side, private lenders usually induce conservatism due to their high level of power in terms of governance and controls. On the other side firms have the incentive to increase earnings not to violate debt covenants and this increases accruals. For this reasons no predictions of sign are made;

ΔSIZE: is the change in total assets, computed in terms of natural logarithm. The impact on accruals is expected to be negative due to the political cost hypothesis;

ΔCF: is the change in cash flow from operations. The higher it is the lower the level of accruals. The sign is expected to be negative;

ΔROA: is the change in return on assets. Given that the higher earnings the more the firm has resources to decrease accruals without side effects (Ahmed, Billings, Morton and Stanford-Harris; 2002) the expectation is for a positive sign because the income decreasing earnings management the year before the tax reduction is easier to implement when ROA is high;

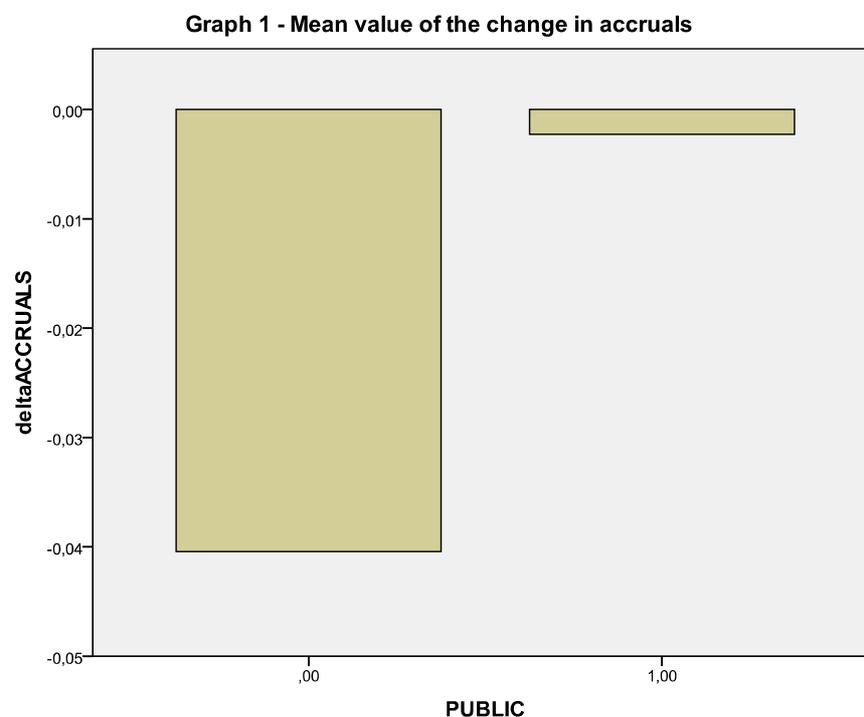
AUDIT: is equal to one if the firm is audited and zero otherwise. Provided that all public companies are audited, this control holds for private firms. The sign is expected to be negative, in that auditors usually induce conservatism;

SALES GROWTH: takes into consideration the impact of growth. The sign is expected to be positive because the higher the growth the higher the accruals.

LOSS: is a dummy variable taking value 1 if the firm reports a net loss in 2002 and zero otherwise. This variable has the aim to control for the possible different incentives that characterize loss firms whose behaviour cannot go in the direction of tax minimization because in their situation they should not pay taxes.

5. Empirical analysis

Table 1 presents descriptive statistics of the main variables partitioned according to the listing status. It is interesting to notice that the mean value of the change in accruals is negative in both groups. For listed firms however it is greater and this result is more evident in graph 1 where the mean value of accruals is plotted. This is a first evidence that listed firms shift more accruals from one period to the other.



Listed firms prove to have a greater size and a higher rate of growth as compared to private ones (these differences are statistically significant at 5% level). As for the number of firms reporting a loss, in the subsample of listed firms there are more cases than in the one of private (30,90% vs 16,29%). Finally, quite all listed firms result to be audited while only the 60% of private firms have an external auditor.

TABLE 1 - Descriptive statistics of the main variables divided by listing status^c

PUBLIC ^a		delta ACCRUALS** ^b	deltaDEBTS	deltaSIZE*	deltaCF	deltaROA*	SALES GROWTH	LOSS**	AUDIT	
,00	Mean	-,0404	,0131	-,0589	,0231	-,0048	-,0104	,1629	,6573	
	Median	-,0349	,0000	,0116	,0023	-,0017	,0116	,0000	1,0000	
	Std. Deviation	,25468	,12158	,62667	,26652	,06535	,24366	,37034	,47595	
	Minimum	-,87	-,33	-7,25	-,98	-,38	-1,00	,00	,00	
	Maximum	1,16	,98	,63	,85	,27	,74	1,00	1,00	
	Percentiles	25	-,1358	-,0208	-,0750	-,0896	-,0235	-,0714	,0000	,0000
		50	-,0349	,0000	,0116	,0023	-,0017	,0116	,0000	1,0000
	75	,0559	,0377	,1120	,0989	,0144	,0951	,0000	1,0000	
1,00	Mean	-,0023	,0042	,0374	-,0056	,0058	,6639	,3090	,9828	
	Median	-,0335	,0000	,0295	,0142	-,0010	,0439	,0000	1,0000	
	Std. Deviation	,37744	,08971	,63369	,23921	,04556	2,61128	,46338	,13055	
	Minimum	-,87	-,35	-7,22	-,98	-,12	-1,00	,00	,00	
	Maximum	1,27	,44	2,09	,85	,22	13,82	1,00	1,00	
	Percentiles	25	-,1844	-,0241	-,0647	-,0576	-,0143	-,0556	,0000	1,0000
		50	-,0335	,0000	,0295	,0142	-,0010	,0439	,0000	1,0000
	75	,1050	,0398	,1455	,0818	,0173	,1764	1,0000	1,0000	

a.PUBLIC takes value 1 if the firm is listed and zero otherwise.

b.Differences are significant at 1% level (**) or 5% (*)

c.Number of observations for each of the two groups: 178

5.1. Multivariate analysis

In table 2 the regression model is presented. As for the model as a whole, the F ratio is statistically significant ($F = 82,722$; $\alpha < 0,01$) and the adjusted R square is equal to about 77%. Such value is so high due to the presence of cash flow among control variables that has been used to compute accruals too. By looking at regressors, the categorical variable PUBLIC partitions the sample into two blocks according to the listing status and has a coefficient that is statistically significant. This is important because it shows that the two groups of companies differs under some respects. Such variable aims at testing the first hypothesis and shows a positive coefficient, as predicted ($\beta = 0,086$; $\alpha < 0,01$). The listing status induces a positive differential change

in accruals and the stated hypothesis obtains in this way a strong support. The listing status implies that a greater income shifting is put in place when a tax rate reduction is planned. Listed firms show a clear attitude to manage earnings through accruals to benefit from the intertemporal difference of tax rate enforced. Such behaviour requires a careful planning in timing and recording of operations. The reasons for this ability showed by listed firms can be explained by their organizational features. As hypothesized above listed firms have developed the attitude to deal with the most important external shareholders by using dedicated organizational traits. This implies that external stimuli are managed in a systematic and organic way in the best interest for the company. The Government is one important shareholder because taxes that it withdraws represent an outflow for the company. For this reason it is plausible that listed firms will deal with this counterpart using specific resources as a tax office is. This leads to an effective and careful tax planning. In the same time, it has to be considered that the typical visibility of listed companies coming from their status makes more difficult the systematic implementation over time of an income decreasing earnings management made for tax purposes. It is indeed possible for private firms in that their financial statements have not to face the stringent scrutiny of financial community. In the analyzed setting the joint consideration of the tax planning attitude and the visibility issue leads to the conclusion that listed firms benefit from the tax rate decrease by changing the timing of some operations mainly of non-monetary nature. The shifting of non-operating accruals grants indeed that reported earnings are not affected deeply and in any case current operations are not affected by such type of tax planning. It is worth underlying that such result is different from what would have been predicted if the previous literature on the topic were considered. Extant literature shows public firms as less tax concerned than private ones in pursuing tax rate reductions. The result of this paper demonstrates that when the difference between listed and non-listed firms is not in the concentration of ownership and all firms are subject to a tax system where book and taxable income are tightly linked, what distinguishes the two categories of firms is their ability to engage in an effective tax planning and listed firms prove to be very

efficient in doing so. This provides a challenge to the consolidated wisdom where public firms are usually presented as less sensitive to the tax argument. The evidence found proves also that the role played by both ownership structure and tax system is crucial in shaping tax incentives.

What has been found doesn't imply that private firms do not engage in earnings management in case of tax reduction. The decision to reduce the tax burden is driven also by factors other than the listing status. One of this is the firm based tax aggressiveness represented by the variable TAXAGGR. In both sub-samples it is positively related with the change in accruals. This variable expresses the attitude of the firm in engaging systematically in tax reducing activities that results in a low effective tax rate over time. This behaviour is firm specific and does not depend upon the listing status. It has its roots in the propensity of managers in containing taxes. Indeed, the coefficient of TAXAGGR is positive and statistically distinguishable from zero ($\beta=0,102$; $\alpha<0,01$) meaning that such attitude determines a greater change in accruals in both listed and private firms. The outlined dichotomy in the drivers of income shifting reflects the distinction between institutional and the firm-based drivers of tax aggressiveness represented respectively by the listing status and by the tax aggressiveness of the firm. Another interesting control variable is GROUP that proxies for the existence of a group of companies, in the position of either subsidiary or holding. The existence of a group makes even clearer the tax planning hypothesis because such entities are usually governed by central offices located in the holding company that plan the activities of all the subsidiaries. It is reasonable to claim that the tax function is equally affected by this organizational feature and operations can be structured in a way that the tax burden of the whole group is minimized. GROUP in the regression is positively related with the change in accruals, as expected, but is not statistically significant.

TABLE 2 - The regression model^{a, b}

Variables ^c	Beta	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
				Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)		-2,726	,007	-,108	-,017		
PUBLIC**	,086	2,444	,015	,010	,095	,764	1,309
TAXAGGR**	,102	3,241	,001	,028	,117	,950	1,053
GROUP	,030	,936	,350	-,020	,056	,934	1,071
deltaDEBT	-,023	-,707	,480	-,312	,147	,857	1,166
deltaSIZE**	-,171	-4,891	,000	-,335	-,143	,766	1,305
deltaCF**	-,830	-26,147	,000	-1,082	-,931	,931	1,075
deltaROA	,042	1,286	,200	-,122	,583	,863	1,158
AUDIT	,009	,261	,794	-,046	,059	,783	1,277
SALESGROWTH	,033	,936	,350	-,003	,009	,774	1,291
LOSS**	,077	2,425	,016	,012	,115	,930	1,075

a. Dependent variable: deltaAccruals; Number of observations: 356.

b. Adjusted R square: 0,766; F statistics 82,722 significant at 1% level.

c. ** significant at 1%; * significant at 5% level.

As for control variables, some comments are worth making. The variable deltaSIZE has a negative and significant coefficient ($\beta = -0,171$; $\alpha < 0,01$). This can be interpreted in the light of the political cost hypothesis: Big firms present a smoother change in accruals not to attract the attention of some stakeholders in a way that is negative for them. The greater the firm the lower income shifting is. As predicted, there is a negative relationship between cash flow and accruals ($\beta = -0,830$; $\alpha < 0,01$). Earnings can be divided into these two components and if one of them increases, the other decreases (Dechow; 1994). Finally, the variable indicating that the firm suffered a pre-tax loss in the fiscal year of 2002 correlate positively with the dependent variable ($\beta = 0,077$; $\alpha < 0,01$). Loss firms are found to have a greater change in accruals. This is reasonable because the year when the tax rate is lower the benefits of the loss carry forward are reduced. So by shifting accruals they try also to decrease losses.

By looking at the model as a whole, the standard errors of the coefficients (not reported) are quite low and this demonstrates a high degree of similarity of the beta values found across samples. Confidence intervals show the boundaries that contain the true value of the coefficients in 95% of hypothetical driven samples. For the main

variables of interest, PUBLIC in particular, it does not contain zero and so the real value of the coefficient is unlikely to be zero. Finally, with respect to the collinearity diagnostics, all the VIF (variance inflation factor) are not substantially greater than one and so there are no biases in the model (Bowerman and O'Connell; 1990). Moreover, no tolerance factor (equal to $1/VIF$) is below 0,2 value indicating the existence of potential problems in the model (Menard; 1995).

5.2. Robustness check

What emerges in the above analysis is that listed firms react more than private ones to the planned tax reduction. This is reflected in a greater shifting of accruals over time. This general result can be explored in more details by restricting the attention to the subsample of observations showing a positive change in accruals over the two years. With this respect, it is reasonable to hypothesize that not all firms react in the same way and even among public firms there are cases where the change is consistent with an income shifting situation and others that are not. In other words, there are firms that react in a proactive way to the tax rate reduction to obtain benefits from this change and other firms that are less involved in this process. So not all companies are interested or have the possibility to take advantage of the potential tax saving implied in the tax rate reduction. It follows that it is reasonable to hypothesize that firms that shift accruals are those that are more tax concerned in that they pursue systematically tax reducing activities. This intuition is explored by looking at the effective tax rate that characterizes firms after partitioning the sample according to the sign of the change in accruals. ETR is the same computed above to measure tax aggressiveness. Table 3 box 1 show the descriptive statistics of the two groups.

TABLE 3 BOX 1 - ETR according to the sign of the change in accruals

deltaACCRUALS		N	Mean	Std. Deviation	Std. Error Mean
ETR	delta >= 0	116	,4291	,29315	,02722
	delta < 0	156	,5068	,26853	,02150

Firms having a positive change in accruals are characterized by an ETR of 42,91% while the cases with negative change have an ETR of 50,68%. So the intuition that firms that behave consistently with an income shifting hypothesis are more active in tax planning is confirmed by the difference in long run ETR. Table 3 box 2 confirms that the difference between the ETR of the first and the second group, equal to -0,07768, is statistically significant at 1% level, one-tail, and so it is unlikely to be zero.

TABLE 3 BOX 2 - Independent Samples Test of ETR among cases with positive and negative change in accruals

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ETR	Equal variances assumed	1,185	,277	-2,269	270	,024	-,07768	,03424	-,14509	-,01026
	Equal variances not assumed			-2,239	235,305	,026	-,07768	,03469	-,14601	-,00934

Once identified, firms with a positive change in accruals as those more active in tax planning, it is possible to replicate the analysis only to this cases to check if the difference between listed and private firms is still relevant in terms of tax behaviour. Table 4 reports result of the regression model computed in the sub-sample of firms, both listed and private, with a positive change in accruals in the years of tax change. The variable PUBLIC presents a positive coefficient of 0,260 that is statistically significant at the conventional level of 1%. The result is in line with what has been found above with the only difference that the coefficient here is higher than before (it was of 0,086 in the main model). So restricting the attention on those firms that care much of the tax issue has the effect of making clearer the difference based on the listing status. Among firms with concern for tax minimization, listed ones are the most efficient in pursuing an effective tax planning. So the different behaviour of the two categories of firms resides in organizational traits induced by the listing status and is not a consequence of the tax attitude of the firms. A confirmation in this sense is

given by the variable TAXAGGR that in this model shows a lower coefficient than before (0,074 against 0,102), the level of significance is decreased at exactly 5% and the confidence interval for the coefficient crosses zero, meaning that the possibility that the true value is just zero cannot be completely ruled out. So the partition of the sample according to the sign of the change in accruals, even if is not completely exact, goes in the right sense. The other control variables do not present relevant variations with respect to the basic model.

Another control is made by running the very same model with the only difference that independent variables, where possible, are put in levels rather than in changes. In particular, control variables are referred to 2003 while the dependent variable is still the change in accruals. As it can be noted in table 4 results are basically the same both for signs and significance of the coefficients of interest.

TABLE 4 - Regression restricted to cases with positive change in accruals^{a, b}

Variables ^c					95,0% Confidence Interval for B		Collinearity Statistics	
		Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)		-2,678	,009	-,177	-,026		
	PUBLIC**	,260	5,022	,000	,091	,210	,687	1,455
	TAXAGGR*	,074	1,663	,100	-,009	,098	,924	1,082
	GROUP	,034	,751	,455	-,032	,071	,924	1,082
	deltaDEBT	-,022	-,459	,647	-,491	,307	,805	1,243
	deltaSIZE	-,020	-,365	,716	-,169	,116	,642	1,558
	deltaCF**	-,829	-18,444	,000	-1,195	-,963	,915	1,093
	deltaROA	,053	1,196	,235	-,230	,924	,946	1,057
	AUDIT	,035	,734	,465	-,051	,111	,790	1,266
	SALES GROWTH	,060	1,129	,262	-,004	,016	,658	1,521
	LOSS**	,116	2,458	,016	,016	,148	,830	1,206

a. Dependent variable: deltaAccruals; Number of observations:

b. Adjusted R square: 0,810 ; F statistics 44,845 significant at 1% level.

c. ** significant at 1% level; * significant at 5% level.

Finally, other versions of the basic model has been computed. Interaction of PUBLIC with DEBT and GROUP are added but they show to be statistically insignificant. Then industry fixed effects are considered in so allowing intercepts to vary according to sectors. Sixteen industries have been identified in the sample by using

the six digit code ATECO. Results (not reported) are unchanged with respect to the main model.

Another version of the model is computed by using the change in accruals with the inclusion of provisions. So the basic algorithm has been modified as follows:

$$OPACC = \Delta ACCOUNTS RECEIVABLE + \Delta INVENTORIES + \Delta PREPAID EXPENSE \\ - \Delta ACCOUNTS PAYABLE - \Delta TAXES PAYABLE - \Delta PROVISIONS$$

$$TACC = NET INCOME - CFO$$

$$NOACC_t = TACC_t - OPACC_t$$

Results (untabulated) are largely identical to the ones commented above. So provisions behave in the same line as the other non-operating accruals.

6. Conclusions, relevance and limitations

The aim of this paper is to shed light on the behaviour of firms when a planned reduction of tax rate occurs. This event allows firms to benefit from the different level of tax rates. One way to do this is to shift income intertemporally and this is the type of reaction taken into consideration in this paper. In particular, firms are expected to decrease accruals when the tax rate is high and increase them when it is lower. The point of interest is to observe the behaviour of listed and private firms to check if some differences can arise. The extant literature on the topic concludes that public firms are less concerned with tax minimization because they face stringent reporting constraints incompatible with a tax reduction hypothesis. The point raised in this paper is that in previous literature such conclusions rest on some feature of the setting taken into consideration that could deeply influence results. In particular, it is assumed that the difference between listed and private firms is in the degree of ownership concentration, more widespread in the first than in the second type of firms. This increases the importance of control mechanisms based on earnings and

harms the possibility to reduce them for tax purposes. Moreover, such results are obtained in environments where capital markets are efficient and book and tax income are quite independent.

The idea of this paper is to analyse the tax behaviour of firms in a setting where both listed and private firms are characterized by concentrated ownership, capital markets do not exercise a strong pressure on firms and the tax system is shaped in a way that book and tax income are tightly linked. In such a framework tax incentives receives much attention in that other reporting constraints are less stringent and tax issues are much more compelling because they pass directly in financial statements. Given this, what makes the difference between listed and private firms is mainly their capacity to take advantage of the change in the tax rate. In particular, public firms have a greater attitude to deal with external stakeholders in a systematic and organized way and the same is true for tax issues. In having dedicated office dealing with taxation, listed firms are more able to plan operations in a way to reduce taxes and the income shifting occurred during a tax rate reduction confirms this claim. So in term of accruals manipulation listed firms are more active than private ones in taking benefits from a change in tax rate. The result of this paper adds a new perspective to the limited empirical evidence on the topic. It challenges the wisdom that public firms are not concerned with tax minimization and shows that in environments different from the ones previously used and in occasion of a tax discontinuity the observed behaviours can be rather different. Moreover, it puts attention to one character of listed firms, that is their organizational ability, usually neglected in tax studies.

The observed results are relevant under different respects. For the users of financial statements this means that also financial statements of listed firms can be deeply affected by tax issues in that they receive much attention when book and tax income are tightly linked. This opens the possibility that results couldn't be the clear mirror of underlying operations in terms of timing of charging. For tax authorities this is interesting because it signals that the tax manipulation made through accruals plays an important role in listed firms also.

This paper presents however some limitations. The result obtained for public firms can be explained not only in terms of a greater tax concern as compared to private ones. Listed firms due to their status gain a great level of visibility and some tax minimizing behaviours, put in place by private firms, can be difficult and even impossible to put in place. This leads to the forced choice to reduce taxes via financial statements by using the opportunities left open by laws. So they stick to regulation and other tax reduction strategies aren't followed. So the paper captures only one type of strategies and it is clear that results are to be read under this light. Tax minimization made outside financial reporting is not captured and so no general conclusions on the duality listed-private firms can be made with respect to tax minimization. The study is based on an environment that has specific characteristics in terms of ownership structure, market pressure and tax system. Results are contingent on these characters and can be extended in similar environments only. Another limitation is represented by the set of accounting principles adopted by the firms in the sample. Starting from 2005 listed firms adopted international financial reporting standard (IFRS) and this harm the possibility to extend the period of analysis. To this it has to be added that the tax system changed as well in the direction of more autonomy between book and tax income and specific rules has been introduced in the computation of income for firms adopting IFRS. So the replication of the study in the very same environment is problematic.

Due to data set constraints, it was not possible to control for the presence in the share capital of an institutional investor. Such subject usually induce more discipline in financial reporting and near the exit period could also produce the incentive toward income increasing policies. So a control for this aspect can be of relevance. Similarly, no controls for ownership concentration are in the regression due to lack of data. A final limitation is represented by the relatively small number of observation used that limits the possibility to generalise the result found.

The tax burden faced by firms: does family control matter?

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The tax burden faced by firms: does family control matter?

1. Introduction

1.1. Overview of the topic

The tax behaviour of companies is not easy to observe because it results from the interaction of many factors. Some of them are external and some others are internal to the firm. They can be summarized respectively in the legal tax framework and in firm characteristics. One of them is ownership structure that is recognized as a relevant feature that deeply shapes reporting incentives. For example ownership determines the propensity of the firm in engaging in earnings management (e.g. Penno and Simon; 1986) or in pursuing operations that produce tax savings (Klassen; 1997; Cloyd, Pratt and Stock; 1996). Despite this, there is little evidence on impact that the identity of the owner has on tax incentives and this offers some opportunities to deeply explore this topic. What will be investigated in this paper is if the family nature of the controlling shareholder is such that the tax behaviour of such firms presents some specific features. The literature acknowledges that family firms behave differently from other types of firms in terms of accounting practices (Wang; 2006). The focus on tax behaviour represents a natural extension of such literature. This paper considers the tax situation of the firm as it is summarized by the tax burden that effectively captures the consequences of various tax incentives and constraints. If it is referred to more than one year it is the result of the tax policies regularly implemented by the firm. Its reliability is increased in the setting taken into consideration in the paper that is characterized by a tight link between book and tax income. In this way, it is possible to ascertain if the family nature of the firm structurally determines the general tax behaviour of the firm as it is mirrored by the tax burden. The research question addressed in what follows is:

Do family firms face a lower tax burden than non-family firms?

This question is of relevance because particular treatments are provided by tax laws on the basis of the type of operations put in place rather than the nature of the tax payers. Provided that not all the tax payers are equal, the analysis of the tax burden actually faced is a useful method to assess if the particular nature of the owner affects the operations of the firm and lastly the general tax position.

1.2. Findings and contribution

This is one of the first papers that directly addresses the issue of the tax position of family firms. In the literature on taxation there are some evidences on the impact of ownership structure on the observed tax behaviour and the literature on family firms provides some hints on the possible peculiarity of such firms with respect to taxation. So this paper put together these two pieces of literature and tries to understand if family firms behave differently with respect to taxation as to firms with another ownership structure. By using a sample of public firms in a time span of four years this paper shows empirically that family firms present systematically a lower tax burden than the other firms in the sample. The greater tax concern of family firms is robust across two measures of tax burden namely the tax disadvantage measure and book-tax differences. These results confirm the different perspective that characterizes family firms where the long run perspective and the crucial role played by internally generated funds¹⁹ lead to a clear tax reducing attitude.

2. Literature review

To answer the research question two streams of literature are used. The first one is about the determinants of the observed tax behaviours and the ways to measure this concept. The second block of literature deals with firm characteristics and their impact on accounting practices. By putting together these two perspectives it is

¹⁹ Mainly in term of retained earnings.

possible to explore if among the drivers of tax behaviour the family nature of the firm plays a role.

2.1. Tax accounting literature

The literature on tax accounting mainly analyses the determinants of firm based tax burden by using one of its more common proxy namely the effective tax rate (ETR) (Rego; 2003). The focus is on the variation of annual tax rates across firms and its drivers. One firm characteristic that has kept much attention is the size. With this respect, two points of view have been developed. Siegfied (1972) argues that large firms are able to save taxes because they dispose of great resources to influence the political process in their favour and have expertise in tax planning and organizing activities at best. This political power theory implies a negative relationship between ETR and size. This relationship has been empirically found by Siegfired (1972) and Porcano (1986). Another perspective on this very same topic is the one of Zimmermann (1983) based on the political cost theory. Large firms due to their high visibility are more likely to attract the intervention of regulators in a way that is unfavourable to them. An example is sanctions or wealth transfers. The consequence of this is a higher observed effective tax rate and a consequent heavier tax burden. Evidences on the positive relationship between ETR and firm size are provided by Zimmermann (1983) and Omer Molloy and Ziebart (1993). To complete the picture, it has to be signalled that there are also studies that found no relationship at all between these two elements (Stickney and McGee; 1982). So the evidence on the impact of size on effective tax rates is mixed. The motivations are due to the different empirical procedures used in term of sample selection, ETR computation and sample period (Wilkie and Limberg; 1990). Another relevant limitation of these studies is that they are based on univariate analysis and so neglects other relevant factors affecting ETR as some firm-specific characteristics.

Gupta and Newberry (1997) also take into consideration financing and investment decisions. The rationale is that capital structure and asset mix policies receive differential tax treatments according to the tax code. For example the decision between debt and equity is not tax neutral because interests are deductible and dividend payments are not. Similarly, capital investments give some benefits in terms of write off periods and amortization plans. Using multivariate and longitudinal data they find that leverage and the composition of assets in terms of the prevalence of capital and inventory deeply affects the level of observed ETR, after controlling for firm profitability. In particular, debt and capital investments determine a lower ETR.

Another characteristic affecting ETR is the level of multinational operations. Slemrod (2001) argues that firms that have operations located in low tax jurisdictions face lower costs of tax avoidance in so granting a more effective tax planning. This point has been addressed empirically by Rego (2003) that analyses if economies of scale exist in tax planning in the sense that large, profitable and multinational corporations avoid more taxes than other firms. Results show that large firms present higher ETR in so confirming the political cost hypothesis. More profitable firms are found to avoid more taxes than firms with lower pre-tax income and multinational corporations have a lower worldwide effective tax rate than domestic ones. This supports the hypothesis that such firms have considerable economies of scale in engaging in tax planning as confirmed by a low U.S. foreign and worldwide effective tax rate. From the reviewed literature it emerges that only some of the factors that explain the variation in observed ETR has been taken into consideration in empirical studies. Other factors as ownership structure, compensation policies and corporate culture can be important as well (Gupta and Newberry; 1997). Following this line, a topic that is definitively unexplored is the nature of the owner. This paper puts the attention in particular on family businesses by meaning with this term all those companies whose main owner is represented by a family. Very little is known about the tax behaviour of this particular and relevant category of firms and the aim of this paper is just to shed light on this issue.

2.2. Family business literature

The second stream of literature that is of interest here is about family firms and in particular the consequences that this particular type of owner produces on relevant issues as capital structure and performance.

The ownership structure of the firm is recognized to have an impact on reported earnings. Warfield et al (Warfield, Wild and Wild; 1995) posit that managerial ownership affects both the informativeness of earnings and the magnitude of accruals. In particular it is demonstrated that firms with high managerial ownership engage less in earnings management because managers have not to deal with contractual limitations and constraints that usually lead to aggressive accounting choices. Similar results are found also in cases where the owner of the firm is a family. One interesting topic is represented by capital structure. Lòpez-Garcia and Sàncnez-Andùjar (2007) show that financial behaviour of family firms differs from non-family counterparts on the basis of three factors: growth opportunities, financial distress costs and internal resources. In particular, family firms mainly rely on internally generated funds for their financial policies and the goal to keep the control of the business is such that growing opportunities are sometimes given up. This result is confirmed by Blanco et al (Blanco-Mazagatos, de Quevedo-Puente and Castrillo; 2007) that use a combination of the resource base view and agency theory to explain the internal dynamics of family business. It is found that family firms are more dependent on debt than non-family firms. So the pecking order theory is strictly followed and when internal funds are not sufficient debts are used to avoid the issue of new equity and the consequent risk to lose control.

Another interesting topic that relates to the category of firms under scrutiny is relative to performance. The interaction between the family, as controlling unity, the business entity, as the set of strategies to produce wealth and the individual family members, representing skills and life stages of family owners creates a peculiar bundle of

resources that determines the familiness of a given firm. These factors deeply affect observed performance (Habbersohn, Williams, MacMillan; 2003). Martinez et al (Martinez, Stöhr and Quiroga; 2007) find that listed family firms perform systematically better than non-family ones with respect to three performance indicators, namely ROA and ROE as measures of profitability and Tobin Q as indicator of value creation. The explanation is that when family firms are exposed to public market conditions (in terms of scrutiny and accountability) professionalize their management and behave as efficient performers. A similar result is provided by Allouche et al (Allouche, Amann, Jaussaud and Kurashina; 2008) that prove that family business perform better than non-family ones with respect to both profitability and financial structure. Another piece of evidence on performance is provided by Sciascia and Mazzola (2008) who study the relationship between performance and the involvement of family in ownership and management of private firms. What emerges is that the involvement of the family in the ownership does not affect observed performance, measured using a multidimensional scale based on financial indicators. On the other side, the involvement of the family in the management negatively affects performance because the non-monetary goal orientation and the difficulty to raise new intellectual capital through the employment of non-family managers prevail. Finally, Westhead and Howorth (2006) demonstrate that closely held private family firms do not differ significantly from non-family firms with respect to financial performance. What emerges is that in family firms other non-financial objectives gain importance as the intention to maintain the control of the company in the hands of the family and the concern to pass the business to the next generation.

Other than performance, another interesting object of study is represented by earnings management. Wang (2006) studies the relationship between family ownership and earnings quality. Family firms are found to have lower levels of abnormal accruals and lower persistence of loss components than non-family ones. Two explanations are given for this evidence. The first is that the higher quality of earnings displayed by family firms is due to the alignment of interests between family

members and other shareholders. The second explanation is that for this type of firms the users of financial statements exhibit greater demand for earnings quality. In the same line is Prencipe et al (Prencipe, Markarian and Pozza; 2008) that take into consideration the different behaviour that characterizes public family and non-family firms in terms of research and development cost capitalization. Using both agency and stewardship theory, it is argued and empirically supported that family firms are less sensitive to income smoothing motivations than nonfamily ones and in this way they engage less in R&D cost capitalization to increase current earnings. Finally Prencipe et al (Prencipe A., Bar-Yosef S., Mazzola P., Pozza L., forthcoming) show that family controlled firms engage less in income smoothing than non-family firms due to the differences in the incentives of managers and the owner investor horizon. Moreover, income smoothing is found to be less probable in those family firms where CEO and board members belongs to the controlling family.

What clearly lacks in this literature is the attention on the tax behaviour of family firms. This topic has been marginally addressed in some studies but none of them hypothesize different tax behaviours of family firms with respect to non-family ones. The aim of this paper is just to contribute this literature by shedding light on this unexplored topic.

3. Hypothesis development

To better analyse the topic it is important to underline the specificity of family firms in terms of goals and incentives. Once this picture is made clear, the implications for tax policies are described.

Family firms are characterized by interests and perspectives that are peculiar if compared to firms controlled by other types of owners. The literature on family business points out that beside financial performance, other goals are equally important (Westhead and Howorth; 2006). Examples are the preservation of family

wealth, the intention to maintain the control of the company in the hands of the family and the concern to pass the business to the next generation. The intention to pursue these objectives makes less compelling the general goal of maintaining a satisfying level of profits for the market. This is an important issue that can be explained using the Stein's model (Stein; 1989) on the so called managerial myopia. This model predicts that the incentive of managers to accelerate earnings from future periods, in so pursuing a short term goal, is increasing in two dimensions: the utility function of managers and the importance of current earnings in predicting future ones. If these two dimensions are such that current earnings and prices are relevant, manager will increase them to signal the market the value of the firm this mechanism being true mainly for listed companies. The very same elements also constitute the source of no-tax costs. The short term orientation of managers leads the firm to forego income decreasing policies and so tax savings. In family firms, however, market pressure does not play a relevant role. The controlling family usually has a long run perspective due to the intention to maintain the stake in the firm and the family name (Wang; 2006). This implies that current earnings are less important for family goals and this leaves more room to implement tax policies that usually results in income decreasing practices.

A closer look at manager behaviours and how they are affected by the family nature of the firm is useful at this point. Managers can be members of the family and they usually share with the controlling family a set of values as trust and altruism (Chami; 1999) that make them less sensitive towards financial results and more involved in satisfying the interests of the owners. This leads to a weak relation between turnover and financial performance (Volpin; 2003). In such a case it is possible to hypothesize a different linkage between managers and owners where the former pursue the interests of the latter. Such situation is theoretically explained by the stewardship theory (Davis, Schoorman and Donaldson; 1997) positing that managers are committed and diligent as owners in managing the firm without the incentive to pursue their own goals. This commonality of intentions is made possible when both

parties value the same set of objectives as equally important. Provided that very often family members are in charge of managerial functions, the predictions of such theory should be even more pervasive. Stewardship theory predicts that the interests of the family are best served when managers attain organizational goals (Davis et al; 1997). In other words, managers will determine owners' satisfaction by granting the success of the firm. This theory is quite different from the traditional principal-agent framework in which managers are supposed to pursue their own interests that are in contrast or not aligned with the ones of owners (Bearle and Means; 1932) with the consequent rise of agency costs (Jensen and Meckling; 1976) to realign the interests of the agent with the ones of the owner.

From the particular set of goals pursued by family firms and the peculiar relationship between family and management it is possible to hypothesize how the tax behaviour of such firms could be. The starting point is in managerial incentives. As stewardship theory predicts, interests of managers are aligned with the ones of the family in that they share a long run perspective in decision making (James; 1999). It follows a lower pressure on earnings in terms of their informational role and their use as control mechanisms for managers. The consequence is that income decreasing earnings management for tax purposes can be made without the risk of suffering high no-tax costs. Recent evidence confirms that taxation has an important role in family business management (Murphy; 2005). Tax planning and its influence on reporting decisions is rated to be very important in most family business, followed by financial, operational and family issues. Another reason to expect that tax issues are deemed to be relevant in family firms is linked to financing decisions. In many family firms internal funds represent an important resource to sustain the growth processes and at the same time they are a way to avoid the issue of new shares with the consequent risk of control dilution. In this sense, family firms apply rigorously the so called pecking order theory (Myers; 1984) on the order in which funds are raised: internal resources, debts and equity (Blanco et al; 2007). A reduced tax burden implies lower taxes to pay and higher funds internally generated (Corbetta; 1995).

Moreover the general goal to preserve family wealth over next generations and the long run perspective that goes beyond the periodic remuneration make the goal of maintaining firm value over time an important issue. Tax planning, in reducing taxes, increases cash flows and so firm value is positively affected. The very same decision to finance the firm using debt rather than equity capital can be read also in terms of tax savings. Interest expenses are indeed tax deductible while dividends give not the same advantage. The choice between debt and capital is also affected by other factors. For example, the propensity of the owner in risking funds for the firm leads to more equity capital while and the lack of capital to invest in the firm can be determinant in the choice to raise debts.

To summarize, family firms are expected to pursue tax saving policies because the pressure on the level of current earnings is in a way reduced by the long run perspective of the owner and by the alignment of interests between the family and the management. Moreover, tax savings are a way to increase internal funds, the main source of finance of family firms. The reduction of the tax burden can be made through many avenues, as the acceleration of costs, the choice of those operations with a more favourable tax regime or the use of tax reducing opportunities allowed by tax laws. The hypothesis is in the sense that if family firms behave aggressively with respect to tax policies, they should be characterized by a lower tax burden as compared to non-family firms where constraints to reduce taxes are greater. So the following holds:

H. Family firms are characterized by a lower tax burden than non family firms.

Provided that this relation has its root in a permanent character of the firm, markedly its family nature, the relation hypothesized is expected to hold for more than one period. Moreover, the analysed setting is characterized by a tight link between book and tax income and this makes the prediction more reliable in that pre-tax income is narrow to taxable one.

4. Methodology

4.1. Sampling

To test the hypothesis, a sample is drawn from Italian listed companies in the period 2000-2003. The decision to use listed firms is in a way mandated by the lack of information on the proprietary structure that characterizes non-listed firms. The sample encompasses all industries except banks, financial companies, pure holdings and real estate firms due to their peculiar activity that deeply affect the meaning of financial statements data. In the following table the sample selection process is summarized:

Sample selection	Number of firms
Original sample ²⁰	235
Observations with missing values on ownership structure	47
Banks, financial companies, holdings and real estate	31
Non-listed firms	33
Number of firms in the final sample	98
Firm-year observation from 2000 to 2003	544

The period under scrutiny is characterized by the so called mono-rail where tax interferences were allowed in financial statements with a consequent large area of overlapping between book and tax income. Such situation represents a fertile ground to analyse tax behaviours. Data are referred to individual financial statements rather than consolidated one because the latter have not tax relevance.

²⁰ The original sample reports data of listed companies from 1999 to 2009: for listed firms data are provided even before they go public and so a check of the real listing status in 2000-2003 was needed to eliminate observations that in the very same period were not listed yet.

4.2. Operationalization of variables

4.2.1. Family firms

There is not a unique way to identify family firms. The literature on the topic proposed over time different definitions according to the dimensions taken into consideration (Westhead and Cowling; 1998).

What is acknowledged is that family firms represent a multifaceted phenomenon that cannot be identified by looking at only one dimension. What contributes to the definition of a family business is more likely a set of interrelated characteristics to be considered together. The literature presents very different definitions. At the first glance, a family firm can be identified in terms of ownership and management or on the basis of the involvement of the family into the business (Handler; 1989). Other definitions underline the attitude of family firms to capture opportunities, implement strategies or use their resources.

In this paper, the definition of family firms is based on Corbetta and Minichilli (1995) that classifies as family business those firms in which one or more families linked by kinship, affinity and alliances holds a sufficient share of capital to take strategic decisions. Two structural attributes are here of interest. The first dimension is ownership concentration and in particular the percentage of ordinary shares owned by the family. The second one is the nature of the owner, being in this case the family or families jointly controlling the firm. In what follows are classified as “family” those firms whose owner is one or more families that hold a percentage of shares such that they represent the controlling shareholder. To ascertain the nature of the owner the information on ownership structure made available by the Italian stock market regulator (CONSOB) are used. It is not uncommon that various family members group the share of capital they belong in one holding company, usually not listed, that represents the main shareholder. In these cases the ultimate owner of such companies, not disclosed in the source of information used, is ascertained through a research in financial journals articles made on internet. In such way it was relatively

easy to identify the nature of the ultimate owner. For robustness check a second definition of family firms is adopted following the extant literature (Minichilli et al 2010). In this case a threshold of 30% is adopted meaning that are classified among family firms those companies where one or more related families owns at least the 30% of the share capital.

4.2.2. The operationalization of the tax burden

A possible way to summarize the tax burden faced by the firm is the use of the effective tax rate (ETR) that is computed as the ratio between current tax expense and pre-tax income. It implicitly assumes that the tax burden is proportionally related to firm-specific return. This assumption creates some noise in the results if we remind that Sholes Wilson and Wolfson (1992) measures the tax rate by using as denominator the return earned by a tax neutral firm. This is far from being a true because pre-tax income is deeply affected by taxation and when it is computed a large part of tax choices has been just made. To take into account the possible shortcomings of the ETR Wilkie and Limberg (1992) proposed a measure of the tax advantage expressed in terms of return on equity. The underlying idea is that the tax position of the firm cannot be identified by reading tax laws but it results from the interaction of those ones with production, financing and accounting choices of the single firm. Given this, they propose a tax subsidy measure on equity by taking the difference of the product between the statutory tax rate and pre-tax income ($\tau * PTI$) and the current tax expense²¹ (CTE) and by dividing the result by stockholders equity (SE). In what follows, to get a measure that is increasing in the tax burden, the TSE is transformed in tax disadvantage on equity (TDE) by inverting the order of the addends. The resulting measure is as follows:

$$TDE = \frac{[CTE - (\tau * PTI)]}{SE}$$

²¹ Deferred taxes are not considered in the computation due to lack of data. In the period under scrutiny it was not required the disclosure of such information.

It represents the tax disadvantage on equity because it compares the tax burden actually faced with the hypothetical tax cost the firm would face if the taxable income were equal to pre-tax income. The greater this difference, the more the firm is tax disadvantaged and vice versa. A low TDE then signals a tax concern of the firm. Another way to operationalize the tax burden is presented in the robustness check section.

4.2.3. Control variables

A feature of the firm that is important to take into consideration is ownership concentration that in family firms is in mean high. In general, ownership concentration is a determinant of tax behaviour in that represents a proxy of reduced market pressure. Low market pressure gives managers the possibility to pursue tax reductions without suffering financial reporting counter effects (Klassen; 1997) because the necessity to maintain a given levels of earnings is less stringent. For this reason it is important to control for the concentration of ownership as an autonomous character of the firm.

The tax burden is influenced by many other factors and the analysis encompasses other control variables retrieved from the literature on the topic. The first one is SIZE, computed as the natural logarithm of total assets. Its impact on the tax burden is ambiguous. As the literature points out it determines either low tax burden due to economies of scale in tax planning or a high one caused by political costs (Siegfried; 1972; Zimmermann; 1983). In the analysed setting the first explanation is adopted in that listed firms pursue tax savings using dedicated resources and so the possibility of economies of scale is feasible. The capital structure and asset mix are also important to control for (Stickney and McGee; 1982). As for the level of debt, it is possible to hypothesize that high leverage reduces tax paid because interests are tax deductible. It is also possible that firm facing high tax rates will issue more debt (Gupta and Newberry; 1992). So DEBT is added to the analysis even if it is difficult to predict which effect prevail.

Asset mix, intended as the composition of total assets, also plays a role. Capital intensive firms are expected to face a lower tax burden because capital investments usually benefit from depreciations and write-off that are tax deductible.

4.3. The model to test

The hypothesis is tested using the following regression model:

$$TDE = \alpha + \beta FAMILY + \gamma OWNCONC + \delta SIZE + \zeta DEBT + \eta CAPINT + \theta INVINT + \lambda LOSS + \mu ROAlgd + \varepsilon$$

The model is computed in the period 2000-2003. To get a measure of the tax burden that does not reflect transitory fluctuations the TDE is referred to the entire four years period, as it is usually made in studies using effective tax rate. For consistency, other variables also are computed as mean of four years.

Variables are defined as follows:

TDE: is the tax disadvantage on equity as defined above. All the items for its computation (CTE, PTI, τ and SE) are the mean value of the period 2000-2003;

FAMILY: is a dummy variable taking value 1 if the firm is classified as family and zero otherwise. The sign is expected to be negative, according to the hypothesis to test;

OWNCONC: is an indicator variable taking value 1 if ownership concentration is greater than 50% and zero otherwise. This variable has the aim to isolate in the main analysis the role played by the nature of the owner rather than the effect of concentration per se. The sign is expected to be negative;

SIZE: is the natural logarithm of total assets. A negative sign is predicted in that big firms are expected to have economies of scale in tax planning;

DEBT: is equal to the financial debt both of short and long run scaled by total assets. No sign is predicted;

CAPINT: represents capital intensity and is equal to the sum of fixed assets over total assets. The sign is predicted to be negative in that capital assets grants firm fiscal benefits in term of higher possibility to deduct costs;

INVINT: represents inventory intensity. The higher inventories the higher tax rate because inventories do not have tax benefits comparable to those attached to fixed assets. The sign is expected to be positive;

LOSS: is an indicator variable that takes value 1 if the firm in the period reports a negative income and zero otherwise;

ROA_lgd: is the return on assets of the previous year. It controls for the role that the level of earnings have on tax reducing activities. The expectation is that profitable firms will have a greater incentive in containing taxes given that in this case tax saving can be of relevant entity. For this reason a negative correlation is expected.

5. Empirical analysis

In Table 1 descriptive statistics of the test variables are presented. By looking at the composition of the sample, the mean value of the indicator variable FAMILY is equal to about the 60%. This represents the percentage of family firms in the sample and it is in line with other studies on Italian listed companies (Prencipe et al; 2008).

Table 1 - Descriptive statistics

		TDE	FAMILY	OWNCONC	SIZE	DEBT	CAPINT	INVINT	LOSS	ROA_lgd
N	Valid	123	124	124	123	123	123	123	123	123
Mean		,0351	,6048	,7177	12,3326	,1925	,1312	,0781	,3496	,0150
Median		,0042	1,0000	1,0000	12,0901	,1897	,0578	,0373	,0000	,0239
Minimum		-,26	,00	,00	7,27	,00	,00	,00	,00	-,51
Maximum		,74	1,00	1,00	17,42	,77	,98	,67	1,00	,16
Percentiles	25	-,0056	,0000	,0000	11,2068	,0751	,0123	,0005	,0000	-,0087
	50	,0042	1,0000	1,0000	12,0901	,1897	,0578	,0373	,0000	,0239
	75	,0408	1,0000	1,0000	13,1524	,2795	,1843	,1208	1,0000	,0608

In table 2 the same descriptive statistics are divided into family and non-family firms. What is worth noticing is the difference in the TDE measure. Family firms present a tax disadvantage that is much lower than non family ones the difference being statistically significant by computing the independent sample t-test. Ownership concentrations differs as well and the number of family firms controlled with more than the 50% of the share capital is much greater than non family firms (88% vs 47%). This confirms that in general family firms avoids the dilution of ownership in the market and the use of equity as a primary source of finance. A more pronounced attention of the family toward the preservation of the firm is represented by the low number of loss and the higher return on assets as compared with non family firms.

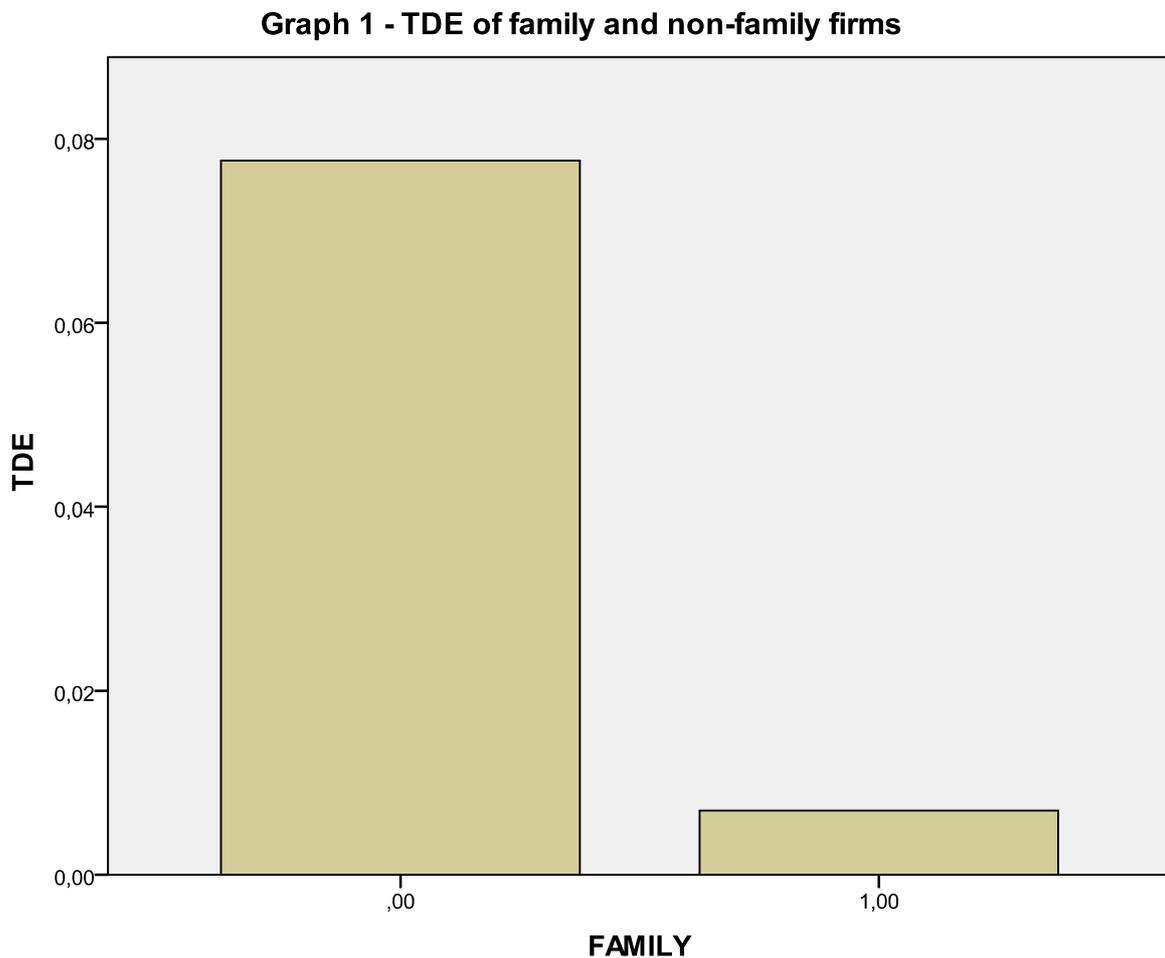
Table 2 - Descriptive statistics divided by ownership type

FAMILY ^a			TDE**	OWNCONC**	SIZE	DEBT	CAPINT	INVINT**	LOSS**	ROA_lgd**	
,00	N	Valid	49	49	49	49	49	49	49	49	
		Missing	0	0	0	0	0	0	0	0	
		Mean	,0776	,4694	12,4432	,1712	,1555	,0518	,4694	-,0092	
		Median	,0195	,0000	11,8688	,1552	,0419	,0170	,0000	,0108	
		Minimum	-,04	,00	9,31	,00	,00	,00	,00	-,51	
		Maximum	,74	1,00	17,42	,52	,98	,36	1,00	,09	
		Percentiles	25	-,0031	,0000	10,7615	,0563	,0086	,0004	,0000	-,0225
			50	,0195	,0000	11,8688	,1552	,0419	,0170	,0000	,0108
			75	,0747	1,0000	14,0475	,2757	,1677	,0742	1,0000	,0428
	1,00	N	Valid	74	75	74	74	74	74	74	74
Missing			1	0	1	1	1	1	1	1	
		Mean	,0070	,8800	12,2594	,2066	,1151	,0956	,2703	,0311	
		Median	,0035	1,0000	12,1678	,2108	,0898	,0552	,0000	,0308	
		Minimum	-,26	,00	7,27	,00	,00	,00	,00	-,19	
		Maximum	,22	1,00	15,09	,77	,76	,67	1,00	,16	
		Percentiles	25	-,0078	1,0000	11,5066	,1107	,0186	,0017	,0000	,0021
			50	,0035	1,0000	12,1678	,2108	,0898	,0552	,0000	,0308
			75	,0223	1,0000	13,1198	,2876	,1855	,1584	1,0000	,0658

a.** The difference is significant at 1% level

5.1. Univariate analysis

The primary attention of the paper is on the level of tax burden faced by family firms as compared to non-family ones. An interesting trend is presented in graph 1 where the mean value of TDE of family and non-family firms is displayed. Firms classified as family, according to the criteria explained above, have a lower tax disadvantage than non-family firms.



This first evidence is then analyzed deeply through a t-test on the mean value of TDE across the two groups. Table 3 box 1 presents the group statistics. The number of cases mirrors the composition of the sample where family firms are 74 and non-family ones 49. The TDE of family firms is equal to 0,007 while non-family firms have a TDE of 0,0776. In both cases the tax disadvantage is positive because taxes paid are greater than taxes computed on pre-tax income using the legal tax rate. So the ownership type is not such that the tax expense is lower than the theoretical level computed on pre-tax income. So both categories of firms face, even if in different degree, a tax disadvantage. Table 3 box 2 shows the results of the independent-sample t-test on the mean difference of TDE. It is equal to -0,07066 that is the

difference between the TDE of family and non-family firms. The sign of the difference is negative as expected and so the test can be made on one-tail. Given that the Levene's test for equality of variances is significant ($F=20,700$; $\alpha<0,01$), results are in the second row of the table. The difference of TDE is statistically significant at the conventional level of 1%. Moreover, the confidence interval is negative and does not cross zero. This confirms that the true value of the difference in means is unlikely to be zero. The results of this test provide a first support to the hypothesis on family firms that shows a lower tax disadvantage as compared to non-family firms.

TABLE 3 Box 1 - T-test on TDE, group statistics

	FAMILY	N	Mean	Std. Deviation	Std. Error Mean
TDE	1,00	74	,0070	,05104	,00593
	,00	49	,0776	,16548	,02364

TABLE 3 Box 2 - Independent Samples Test on TDE

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TDE	Equal variances assumed	20,700	,000	-3,440	121	,001	-,07066	,02054	-,11132	-,03000
	Equal variances not assumed			-2,899	54,097	,005	-,07066	,02437	-,11952	-,02180

A second piece of evidence is given by the correlation analysis presented in table 4. The Pearson correlation between TDE and FAMILY is negative and significant at 1% level, one tail. The trait of familiness is therefore associated with a lower tax disadvantage. Similar results are obtained by computing a non-parametric test for correlation (as the Kendall's tau, not reported). A final test is made by considering the partial correlation between the same variables but controlling for the ownership concentration. As table 5 shows, the relationship between FAMILY and TDE is statistically significant even if the a control for the concentration of ownership is introduced. Such controls does not alter the relationship between the nature of the owner and the level of tax burden. Indeed, if the relationship between OWNCONC

and TDE is computed, the relationship is negative as well but not statistically significant (not reported). This can be interpreted as a signal that the lower tax burden of family firms depends upon the nature of the owner and not on the concentration of ownership per se.

TABLE 4 - Pearson correlation between TDE and FAMILY

		FAMILY	TDE
FAMILY	Pearson Correlation	1	-,299**
	Sig. (2-tailed)		,001
	N	124	123
TDE	Pearson Correlation	-,299**	1
	Sig. (2-tailed)	,001	
	N	123	123

** . Correlation is significant at the 0.01 level (2-tailed).

TABLE 5 - Partial correlation between TDE and FAMILY controlling for OWNCONC

Control Variables		TDE	FAMILY
OWNCONC	TDE		
	Correlation	1,000	-,269
	Significance (2-tailed)	.	,003
	df	0	119
FAMILY	TDE		
	Correlation	-,269	1,000
	Significance (2-tailed)	,003	.
	df	119	0

5.2. Multivariate analysis

TABLE 6 shows the results of the regression outlined above. The adjusted R square of the model is equal to 0,595 and the F statistics is statistically significant. The variable FAMILY, that takes value one if the firm has been classified as family owned, has a negative coefficient, as predicted, that is statistically distinguishable from zero ($\beta = -0,151$; $\alpha < 0,05$). The effect of family ownership has the consequence to induce a reduction of the tax disadvantage measure if compared with non-family

firms. So the tax disadvantage over the time period taken into consideration is lower in family firms that are able to contain the level of tax expense toward the theoretical level represented by taxes computed on pre-tax income. The meaning of this result, that is consistent with the evidences given by the univariate analysis, can be read in the sense of a greater tax concern of family firms as compared to non-family ones. In particular, if a firm has the requirements to be classified as a family one in that it has a family in the share capital that represents the main owner, the resulting tax burden, as expressed by TDE, is lower than those firms that do not have the same characteristics. This is true in the period of four years taken into consideration and so what has been found is not a transitory phenomenon but represents a structural trait. So the family proves to consider taxation as an important issue that is worth taking into consideration and this evaluation is such to overwhelm the side costs that tax minimization usually implies. This result is interesting because until now no evidence in this sense has been provided by the literature even if some tax concern of family firms has been hypothesized (Murphy; 2005). The reduction of taxes paid is also functional to another important goal usually pursued by family firms, markedly the increase of internally generated funds. This claim does not rule out the possibility that tax reductions are made also for other reasons, as for example to obtain personal benefits gained through higher available funds. Given that tax expenses in income statements represent a roughly equivalent cash outflow (not just equal due to deferred taxes) it is clear that if taxes are contained, by using the tax reducing devices allowed by tax laws, the cash flow of the period increases of the same amount of tax saved. Such result can be seen as a consequence of the importance that family firms give to internally generated funds that represents a primary source of capital, immediately followed by debt.

Table 6 - The regression model^{a, b}

Variables ^c		Beta	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
					Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)		1,978	,050	,000	,231		
	FAMILY*	-,151	-2,088	,039	-,070	-,002	,636	1,572
	OWNCONC	,064	,961	,339	-,017	,050	,749	1,336
	FAMCEO	,055	,857	,393	-,017	,044	,794	1,259
	SIZE	-,093	-1,538	,127	-,015	,002	,903	1,107
	DEBT	-,056	-,932	,354	-,146	,053	,922	1,085
	CAPINT	,036	,583	,561	-,057	,104	,881	1,135
	INVINT	,091	1,491	,139	-,034	,239	,899	1,112
	LOSS**	,212	3,182	,002	,019	,084	,748	1,337
	ROA_lgd** INDUSTRY FIXED EFFECTS: ADDED	-,637	-9,236	,000	-1,178	-,762	,699	1,432

a. Dependent Variable: TDE. Number of observations:

b. Adjusted R square: 0,595; F statistics 20,878 significant at 1% level

c. ** significant at 1% level; significant at 5% level.

Some comments are worth on control variables. The concentration of ownership (OWNCONC) is not statistically significant and so there is the possibility that the percentage of share capital per se does not determine a particular impact on tax disadvantage if the nature of the owner is not explicitly taken into consideration.

Firms presenting negative earnings in the period under scrutiny show an higher TDE, the positive coefficient being statistically significant ($\beta = 0,212$; $\alpha < 0,01$). It seems that loss firms face a tax disadvantage even if their earnings are negative. It has to be recalled the way in which the tax disadvantage is computed. It is the difference between income taxes and the product between earnings and the legal tax rate. If earnings are negative, in the numerator there is the difference between taxes and the tax benefit represented by the possibility to carry forward losses. Provided that taxes in loss firms should be low or even zero, the TDE for those firms quantify the potential tax benefit attributable to losses and in this light it is reasonable that the correlation between the two variables is positive. Finally, the profitability of the firm, represented by ROA_lgd, proves to be an important incentive toward tax minimization in that the higher it is the lower is tax disadvantage ($\beta = -0,637$; $\alpha <$

0,01). Profitable firms can obtain greater tax savings and have higher resources to plan their activities in the sense that the tax burden results contained.

5.3. Robustness checks

The main analysis made above is then replicated with some variations to see if the results obtained still hold.

The model is computed again by changing the indicator variable that operationalize the family nature of the firm. The variable FAMILY_2 classifies as family those firms where the controlling family owns more than 30% of the share capital. As it can be noted in table 7, the variable of interest is still negatively related with TDE and is statistically significant ($\beta = 0,147$; $\alpha < 0,05$). So even adopting the 30% threshold the results obtained above still holds. The rest of the model is basically unchanged.

Table 7 - Regression with another measure for family firms^{a, b}

Variables ^c	Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics	
	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)		1,844	,068	-,008	,222		
FAMILY_2*	-,147	-2,024	,045	-,068	-,001	,628	1,592
OWNCONC	,069	1,019	,310	-,017	,052	,718	1,392
FAMCEO	,050	,781	,437	-,018	,042	,810	1,235
SIZE	-,086	-1,420	,158	-,015	,002	,903	1,107
DEBTS	-,056	-,930	,354	-,146	,053	,921	1,085
CAPINT	,040	,646	,520	-,054	,106	,888	1,127
INVINT	,092	1,502	,136	-,033	,240	,897	1,115
LOSS**	,208	3,106	,002	,018	,083	,743	1,345
ROA Igd **	-,645	-9,413	,000	-1,189	-,775	,710	1,408
INDUSTRY FIXED EFFECTS: ADDED							

a. Dependent Variable: TDE. Number of observations: 124

b. Adjusted R square: 0,594; F statistics: 20,802 significant at 1% level.

c. ** significant at 1% level; * significant at 5% level.

A second set of tests is made by using another dependent variable that expresses the tax situation of the firm, namely book-tax differences. This measure is used in the literature as a synthetic measure to summarize the tax policies of firms with the implicit assumption that is not possible to reduce the tax burden without affecting

reported income (Mill; 1998). Indeed large book-tax differences are usually interpreted as the presence of reporting constraints that impede tax reducing policies. On the contrary, the more the two figures of earnings are aligned, the more effective is the tax planning in that quite all costs and revenues recognized in financial statements are also tax allowed. This is particularly true in the setting analyzed in the paper because tax interferences in income statements are allowed by law and so tax minimization directly affects reported income. The book-tax difference just measures the tax disadvantage represented by costs and revenues considered in the computation of taxable income but not in reported income.

Provided that pre-tax income is not publicly available, it is computed as the ratio between income taxes and the legal tax rate by using the following basic relation:

$$\text{Income taxes} = \text{Taxable income} * \text{legal tax rate}$$

$$\text{Taxable income} = \frac{\text{Income taxes}}{\text{legal tax rate}}$$

Once obtained taxable income, book tax differences are computed as follows:

$$BT = \frac{(\text{Pre tax income} - \text{taxable income})}{\text{Total assets}}$$

The variables of the formulas are computed as the mean of the period 2000-2003. The average legal tax rate is equal to 40%²². The lower BT are, the more tax and financial statements policies are aligned and it is reasonable to hypothesize that book income is influenced by tax policies. If the difference is positive it expresses an advantage in that the firm is able to reduce the tax base below the reported income that is the starting point to compute taxes. This means that either there are no-taxable revenues or expensed costs are diluted overtime thanks to specific tax rules that allow this. To get a measure that is increasing in the tax disadvantage as the TDE previously used is, BT is multiplied by -1. It expresses the disadvantage represented by having a taxable income greater than pre-tax income and so the firm

²² It is not the enforced tax rate but it is higher to take into consideration the role played by other taxes on corporate income.

pays more taxes due to undeductable costs or revenues not charged in income statements. For the sake of clarity, this measure is referred herewith as Tax-book difference (TBdiff).

Table 8 box 1 shows the mean value of TBdiff divided according to the nature of the firm. In particular, family firms presents a value lower than non-family ones (0,0059 vs 0,089). This result is confirmed by the independent sample t-test (table 8, box 2) where the mean difference is statistically significant and so it is unlikely to be zero (-0,7705; $\alpha < 0,01$)²³. Family firms appears to have a taxable income that is more aligned with reported earnings. In the mono-rail setting analyzed here this implies a greater incidence of tax reducing choices made by family firms that leads to the alignment with taxable income.

Table 8 Box 1- T-test on TBdiff group statistics

	FAMILY	N	Mean	Std. Deviation	Std. Error Mean
TB_diff	1,00	74	,0059	,04502	,00523
	,00	49	,0829	,16707	,02387

Table 8 Box 2 - Independent Samples Test on TBdiff

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TB_diff	Equal variances assumed	26,673	,000	-3,773	121	,000	-,07705	,02042	-,11749	-,03662
	Equal variances not assumed			-3,154	52,646	,003	-,07705	,02443	-,12607	-,02804

In line with the analysis made above, the correlation between the variables FAMILY and TBdiff is computed. As it can be noted in table 9 the Pearson correlation is negative and statistically significant ($P = -0,324$; $\alpha < 0,01$). So the family nature of the firm determines a lower difference between tax and book income in the sense of reported earnings more aligned with taxable income. The same is true if the partial correlation is computed by controlling for OWNCONC, the concentration of

²³ Given that the Levene statistics for equality of variances is significant, results of the test are on the second row of table 8 box 2.

ownership (not reported). Such results are in line with what have been found above by using the TDE measure.

Table 9 - Pearson correlation between FAMILY and TBdiff

		FAMILY	TB_diff
FAMILY	Pearson Correlation	1	-,324**
	Sig. (1-tailed)		,000
	N	124	123
TB_diff	Pearson Correlation	-,324**	1
	Sig. (1-tailed)	,000	
	N	123	123

** . Correlation is significant at the 0.01 level (1-tailed).

A further piece of evidence is given by the relationship between the two measures used in the paper to compute the tax disadvantage to see if they go in the same direction and so capture properly the underlying phenomenon. Table 10 shows that the coefficient of correlation between TDE and TBdiff is positive and very high (0,819, significant at 1% level). So the two ways used to operationalize the tax burden converge in the same direction and this explains the same results they give in the analysis.

Table 10 - Pearson correlation between TDE and TBdiff

		TDE	TB_diff
TDE	Pearson Correlation	1	,819**
	Sig. (1-tailed)		,000
	N	123	123
TB_diff	Pearson Correlation	,819**	1
	Sig. (1-tailed)	,000	
	N	123	123

** . Correlation is significant at the 0.01 level (1-tailed).

Once ascertained the goodness of book-tax differences in capturing the tax disadvantage of the firm, it is possible to compute again the regression model commented above as table 11 shows.

Table 11 - Regression with TBdiff as dependent variable^{a, b}

Variables ^c	Beta	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
				Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)		2,931	,004	,062	,319		
FAMILY*	-,154	-1,921	,057	-,074	,001	,636	1,572
OWNCONC	-,013	-,179	,858	-,041	,034	,749	1,336
FAMCEO	-,001	-,019	,985	-,035	,034	,794	1,259
SIZE*	-,150	-2,221	,028	-,020	-,001	,903	1,107
DEBT	-,106	-1,584	,116	-,200	,022	,922	1,085
CAPINT	-,039	-,577	,565	-,116	,064	,881	1,135
INVINT	,065	,966	,336	-,078	,226	,899	1,112
LOSS**	,303	4,094	,000	,038	,110	,748	1,337
ROA_lgd** INDUSTRY FIXED EFFECTS: ADDED	-,442	-5,764	,000	-,908	-,443	,699	1,432

a. Dependent Variable: TB_diff. Number of observations; 124.

b. Adjusted R square: 0,499; F statistics 14,491 significant at 1% level.

c. ** significant at 1% level; * significant at 5% level.

The result of interest is relative to the coefficient of the variable FAMILY that is negative, as predicted and statistically significant ($\beta = -0,154$; $\alpha < 0,05$). It is worth noting that in this case the coefficient in absolute value is slightly higher than the results obtained in the main analysis. Other than this, the result obtained above still holds with the use of another measure of tax burden. As for the other variables, results are basically unchanged. One comment is worth about loss firms. The variable LOSS is in this case positively related with the dependent variable ($\beta = 0,303$; $\alpha < 0,01$). This can be interpreted as the relatively lower tax concern of such type of firms whose situation is such that tax minimizing behaviour are not effective and the main concern is to carry forward losses to benefit from their deduction in case of future earnings.

6. Conclusions, relevance and limitations

The aim of this paper is to understand if family control is such that the level of tax burden is in a way affected. The caveat is represented by previous papers showing the existence of a relationship between some governance structure and the observed tax behaviour. For example, differences are found between private and public firms

and between firms with high or low ownership concentration. The rationale is that the factors that impede or favour tax reducing behaviours are weighted differently in each category. The benefits embedded in tax savings and the consequent tax costs that they imply are evaluated according to their relative importance. Given this, the point explored in this paper is to see if a particular type of owner represented here by the family, is such that the observed tax behaviour is in a way affected. Several arguments leads to the hypothesis that family are more tax concerned than non-family firms. Among the possible explanations there is the long run perspective of family firms that pursue the preservation of capital control rather than a given level of current earnings, the alignment of interests between managers and owners that does not raise problems of diversion of resources and the tendency to use as the main source of finance internally generated funds rather than equity. These arguments lead to the claim, empirically supported, that family firms face a lower tax burden as compared to non-family ones. The tax burden is operationalized by using a measure of tax disadvantage taken by the literature that synthetically expresses the results of the tax policies implemented. Such measure is particularly suitable in the analysed context characterized by a tight link between book and tax income because reported earnings are narrow to taxable ones. The results found are relative to a four-years period and so they show a tendency that is not transitory and due to occasional phenomena: it expresses a long run attitude of family firms to contain more the tax burden than non-family ones. This result is unchanged if instead of TDE book tax differences are used. The difference observed for family firms is linked to the particular nature of the owner because results still holds even after controlling for ownership concentration.

This paper adds a piece of evidence in the literature on family firms because the tax behaviour of family firms is relatively unexplored. Moreover, the literature on taxation is extended by adding another explanatory factor of the observed tax burden namely the family nature of the firm.

This result is of relevance for both the users of financial statements and for policy makers. The greater tax concern of family firms have clear consequences on the level and the quality of reported earnings that clearly reflect the tax policies implemented. This is particularly true in the analyzed framework where tax interferences are allowed in financial statements. So earnings need to be evaluated by keeping into consideration the tax factor. The second implication is for policy makers. The results of this paper show that with respect to tax issues family firms behave differently than other types of firms. This can be relevant for tax authorities when new taxes are imposed because the existence of a category of tax payers that carefully try to contain their tax burden, can have important implications on the level of taxes withdrawn. Moreover, the tax concern uncovers the importance of internally generated funds for family firms that privilege them and debts rather than the issue of new equity. This opens the possibility to affect the capital structure of such type of firms by leveraging the different tax benefit embedded in each source of finance. So taxation can be used to shape the incentives of firms in a way that their financial choices are affected.

The paper presents however some limitations. A point not directly addressed is relative to the risk embedded in the decision to reduce taxes. Even if the paper implicitly assumes that the tax reducing activities are made without violate any legal prescription, it cannot be completely ruled out the risk of a tax scrutiny. Given this, it couldn't be so plain that managers always choice tax minimization decisions if they risk personally in the scrutiny of tax authorities. Another relevant issue is that the paper focuses its attention on the tax burden computed using financial statements data. So the results found are strictly linked to this issue and no general conclusions about the lower tax concern of one type of firms with respect to the other can be made.

Other limitations are in the sampling process, limited only to public firms that are subject to particular controls and informative constraints. Results can also be extended to private firms to check if the listing status plays or not a relevant role. This

has not been done due to lack of data on the ownership structure of private firms. Another limitation is represented by the relatively short time period addressed i.e. four years. It is due to the dramatic change occurred in the years after the sampling period in the tax system that would have affected the meaning of results. A more extended time period could give more robust results. Finally, it needs to be taken into consideration the particular environment used. It is characterized by high fiscal pressure on firms and by a tight link between book and tax income. Even if this grants that tax behaviour receives much attention from firms, it leaves open the question if such results hold also in other environments where book and tax income are relatively more independent and the global tax burden is not so high as in Italy.

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