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Accounting Conservatism and Debt Financing

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Abstract

For a sample of 26 non-financial listed Portuguese firms-years from 2002 to 2016, this paper study whether higher debt firms adopt more conservatism in the prior year to debt contract. We also analyze whether *ex-ante* conservative borrowers are rewarded with lower debt contracting costs. Further, we study whether firms with high debt issuance exhibit more conservatism accounting prior borrowing compared to those with low debt issuance. The empirical findings suggest that debtholders value conservatism and lend more debt and charge lower cost of debt to borrowers that report conservatively. In addition, the results indicate that firms with prior high debt issuance exhibit more conservatism accounting after borrowing compared to those with low debt issuance.

Keywords: Conservatism Accounting; Agency Cost of Debt; Contracting Debt Theory; Debt Financing; Debt Costs; Lenders

1. Introduction

According to Coase (1937, in Cullinan et al., 2012), an enterprise can be considered as a conjunction of a set of contracts, and the interests of all parties referred to in these contracts are reflected in the firm's financial statements. These financial statements are thus an important information source for lenders and other users (Sunder, 1997; Shivakumar, 2013). Really, financial reports are used to evaluate borrowers to determine terms of lending and debt contract rules. Financial statements reflect accounting conservatism, which is designed to protect users' interests relative to those of management. Consequently, the level and trend of conservatism are relevant to the financial statement users (Srivastava and Tse, 2009).

The literature argues that conservative financial reporting reduces information asymmetry and facilitates contracting (Watts, 2003a; Ball and Shivakumar, 2005; LaFond and Roychowdhury, 2008; Shivakumar, 2013; Biddle, Ma and Song, 2016). One explanation of the demand for conservatism is that shareholders and debtholders demand conservative financial reporting from managers to reduce agency costs and to align managerial incentives with those of shareholders. Because of a debtholder's asymmetric payoffs, they demand conservative accounting from managers. Debtholders have little to gain when a firm performs better than expected, but have a lot to lose when a firm's performance is poor. Thus, many debt contracts include covenants which allow debtholders to limit losses in liquidation and to protect their interests. Debt covenants written on accounting numbers are common components of corporate debt contracts (Watts and Zimmerman, 1986; Shivakumar, 2013). Contracts based on conservative (prudent) numbers reduce the probability of managerial expropriation of shareholders' resources or of excessive distribution of resources to the shareholders at the expense of debtholders (Watts, 2003a; Armstrong, Guay and Weber, 2010).

In debt contracts, creditors favor conservatism because they are concerned with the lower bound measure of a firm's net assets before granting loans (Beneish and Press, 1993). In liquidation cases, conservative accounting is applied to determine the value of the net assets; where possible losses are taken into account leaving out the unverifiable gains. In fact, conservative accounting constrains upward valuations of net assets and cumulative earnings, and consequently it helps mitigate wealth appropriations by the lower order claimants (Watts, 2003a). Conservative accounting prevents wealth expropriation and protects lenders by more quickly transferring important decision rights from loss-making firms to lenders (Ball et al., 2008; Kothari et al., 2009). In fact, timely loss recognition sends timely signal to debtholders, who could take actions to restrict shareholders' self-serving behavior either by taking over the control or by exercising greater oversight. Thus, accounting conservatism is considered desirable in the debt contracting/issuance (Ball et al., 2008).

Extant literature suggests, mainly, two key assumptions underlie debtholders' preference for reporting conservatism. First, debtholders have asymmetric payoffs with respect to the firms' net assets and hence are more concerned with information about the lower ends of the earnings and net assets distribution. Second, debt contracts and their associated covenants are written over accounting numbers, and it is costly to write contracts that adjust these numbers (Basu, 1997; Watts, 2003a; Ball and Shivakumar, 2005; Guay and Verrecchia, 2006).

Conservatism helps creditors monitor and maintain a minimum amount of verifiable net assets within a firm by restricting dividend payments, executive compensation, and value-decreasing investment decisions (Watts, 2003a; LaFond and Watts, 2008). Lenders, in turn, share the benefits with borrowers by lowering interest rates, increasing lending limits, and lengthening maturities (Ahmed et al., 2002; Ball et al., 2008; Zhang, 2008; Callen et al., 2009). Zhang (2008) shows that conservatism benefits lenders *ex-post* through the timely signaling of default risk, as manifested by accelerated covenant violations and that its benefits borrowers' *ex-ante* through lower interest rates. Therefore, conservative accounting is likely to be mutually beneficial to both lenders and borrowers. For example, Vasvari (2006), Zhang (2008), Lee (2012), Haw et al. (2014), Salama and Putnam (2015) and Sunder et al. (2018) find that *ex-ante* conservative borrowers are rewarded with lower debt contracting costs. Gao (2013) demonstrates that conservatism reduces earnings management and debt renegotiation inefficiency. Srivastava et al. (2015) find that timely loss recognition increases the likelihood of timely closures of unprofitable projects. Göx and Wagenhofer (2009, 2010) show that conservative accounting system may be optimal as it maximizes the *ex-ante* probability of obtaining debt financing. As a result, studying the relationship between conservatism and debt financing is potentially interesting.

Using a sample of 26 Euronext Lisbon non-financial firms from 2002 through 2016, in this paper, we study whether higher debt firms adopt more conservatism in the prior year to debt contract/issuance. The results indicate that firms with high debt issuance exhibit more conservatism accounting prior borrowing compared to those with low debt issuance. We also analyze whether *ex-ante* conservative borrowers are rewarded with lower debt contracting costs. We find that firms using more conservative accounting have significantly lower debt costs. Finally, we further examine whether firms that are *ex-ante* conservative continue to be conservative after entering into the debt contract. We document that firms with prior high debt issuance exhibit more conservatism accounting after borrowing compared to those with low debt issuance.

This study offers a number of contributions. First, it extends the literature on the relationship between conservatism accounting, debt contracting, and debt cost (Ahmed et al., 2002; Watts, 2003a; Ball and Shivakumar, 2005; Ball et al., 2008; Beatty, Weber and Yu, 2008; Nikolaev, 2010; Caro, 2012; Martin and Roychowdhury, 2015). Second, we provide the first empirical evidence on the effect of accounting conservatism on debt issuance and debt costs. In addition, we also provide evidence on the effect of debt financing on conservatism accounting after initial borrowing using Portuguese data. In a civil-law context such as Portugal, financial institutions play a key role in providing capital funds, and are represented in the board of directors as institutional directors. In addition, we show that there exists a trade-off between conservatism and debt financing in an agency setting characterized by the presence of large controlling shareholders. Third, the results of our paper might also be of interest to standard setters. The objective of financial reporting is to allow stakeholders to make informed

decisions about the business. One of those groups of stakeholders is lenders or potential creditors, who need information to make decisions about providing or settling loans or other forms of credit. Literature suggests that when making lending decisions, lenders value accounting conservatism as a mechanism to mitigate agency conflicts between borrowers and lenders (Gormley et al., 2012; Jayaraman and Shivakumar, 2013). Thus, although lenders' access to private information may mitigate the importance of their informational need, the extensive use of financial reporting figures in lenders' monitoring role suggests an additional demand that standard setters may want to consider. Fourth, our study is also relevant to accounting standard setters by informing the continuing role of conservative accounting as a central principle of financial reporting. Fifth, this research is of potential interest to international investors who may seek to understand how reporting practices may differ across borders, and how different capital structures (external capital) may relate to the quality of financial reporting. Finally, findings based on Portuguese data also help build a more expansive international understanding of the relationship between debt financing, cost of debt, and conservatism accounting.

This paper is structured as follows. In section two, we provide an overview of the theoretical background and develop testable hypotheses. We present the variable measurement and describe the research methodology in section three. The sample selection process and characteristics of the sample are presented in section four. The results are reported and discussed in section five. Finally, section six concludes the study.

2. Theoretical Background and Testable Hypotheses

2.1. Agency cost of debt and conservatism

Two major agency problems exist in public firms: The one between shareholders and managers and the one between shareholders and debtholders.

Conservatism is considered an efficient contracting mechanism that can reduce agency problems between shareholders and managers (Watts, 2003a; Kwon et al., 2001; Kothari et al., 2009). Timely loss recognition may offset, partially or fully, the opportunistic behaviors of the firm's managers, who tend to overstate profits to (Watts, 2003a; Kwon et al., 2001; Roychowdhury and Watts, 2007; Kothari et al., 2009; Goa, 2013; Khalifa and Othman, 2015). Consistent with this, for example, Chen et al. (2007) find that when the accounting system is conservative, the earnings management incentive diminishes. In addition, conservatism mitigates agency problems associated with managers' investments decisions. That is, the ability to defer loss recognition provides managers an incentive to continue operating investments with negative net present values to avoid reported losses on sale or abandonment (Ball and Shivakumar; 2005). Conservative reporting also benefits shareholders because it helps mitigate information asymmetry (LaFond and Watts, 2008; García Lara et al., 2014). Garcia Lara et al. (2011) find that shareholders benefit from conservatism because it mitigates uncertainty about the amount and distribution of future cash flows as well as the volatility of future stock prices, which leads to increased information precision and reduced cost of equity. In addition, Kim and Zhang (2016) show that conservatism reduces stock price crash risk. As a result, timely loss recognition benefits shareholders by helping them to monitor managers more efficiently and by motivating managers to maximize firm value.

Similar to the shareholder-manager conflicts, agency problem also exists between debtholders and shareholders. Debtholders lend capital to firms. After lending the capital, the primary concern of creditors is to ensure that their capital is eventually returned, with interest. Debtholders' asymmetric payoff, coupled with information asymmetry between borrowers and debtholders, generates agency conflicts and agency cost of debt (Jensen and Meckling, 1976).

Conservatism can alleviate the agency costs of debt in several ways. First, conservative accounting principles anticipate potential decreases in income or assets well before they are realized, but postpone the recognition of income or asset increasing events until they are sufficiently locked in. Thus, conservative accounting constrains upward valuations of net assets and cumulative earnings, and consequently it helps mitigate wealth appropriations by lower order claimants (Watts, 2003a).

Specifically, for example, Ahmed et al. (2002) show that conservatism lowers the cost of debt in public debt contracts by reducing the likelihood of a dividend payment out of capital since lower bound of earnings and net asset value are reported under conservative accounting system. Callen et al. (2016) also find that borrowers with high levels of conservatism are less likely to make abnormal payouts to shareholders.

Second, earlier recognition of losses also makes debt covenants more binding and, as a result, accelerates covenant violations and transfers of control rights to debtholders in the event of economic losses, allowing lenders to limit their downside risk through protective actions (e.g., by accelerating maturity) (Watts, 2003a; Beatty et al., 2008; LaFonf and Watts, 2008; Zhang, 2008; Nikolaev, 2010). This curtails the potential for managers to take opportunistic actions against debtholders in distress situations. That is, the timely transfer of control rights can help debtholders stop managerial decisions that may further reduce debt value. Loktionov (2009) shows that conservative reporting reduces risk shifting in distressed firms. Zhang (2008) finds evidence that conservatism lowers cost of debt in private loans because timely loss recognition accelerates covenant violations. Her findings suggest that by recognizing bad news more quickly, conservative financial reports facilitate the role of covenants and thus, reduce creditors' risk. In the same sense, Nikolaev (2010) documents that firms with more covenants in their public debt exhibit higher level of accounting conservatism.

Third, accounting conservatism can also mitigate the overinvestment problem (Ball, 2001; Watts, 2003a; Ball and Shivakumar, 2005; Francis and Martin, 2010; Lee, 2012; García Lara et al., 2016). By recognizing losses in a more timely fashion than gains, conservatism reduces managers' incentives to undertake risky, and negative net present value projects. These investments are more likely to generate losses, which, under conservative accounting, need to be reflected in earnings more quickly. This timelier recognition of losses may reduce earnings-based executive compensation and worst trigger covenant violations that result in managers losing control of their firms to debtholders (Ball and Shivakumar, 2005; Kravet, 2014). Therefore, *ex-ante* accounting conservatism induces managers to refrain from negative net present value (NPV) projects and to abandon *ex-post* loss-making investments quickly (Watts, 2003a; Ball and Shivakumar, 2005; Bushman and Piotroski, 2006; Balakrishnan et al., 2016). As a result, timely loss recognition encourages managers to terminate projects and limit further value destruction. In this sense, Francis and Martin (2010) find that firms with timely loss recognition are less likely to make post-acquisition divestitures, suggesting better *ex-ante* decisions. They also find a stronger association between timely loss recognition and acquisition profitability when a bidding firm has greater *ex-ante* agency costs, and therefore increased benefits from a policy of accounting conservatism. García Lara et al. (2016) find evidence that conservatism constrains over-and under-investment. In an international study, Bushman et al. (2011) find that timely loss recognition increases the sensitivity of corporate investment to declining investment opportunities, and find no evidence that timely loss recognition influences the sensitivity of investment responses to increasing investment opportunities. Srivastava et al. (2015) find that timely loss recognition increases the likelihood of timely closures of unprofitable projects. Overall, these results are consistent with the theory that timely loss recognition disciplines overinvestment by managers confronted with declining investment opportunities.

Fourth, firms with conservative accounting are less likely to engage in upward earnings management (Chen et al., 2007; Khalifa and Othman, 2015). The reduction in earnings management improves risk sharing, and hence contract efficiency. Chen et al. (2007) show that when accounting numbers serve both the valuation role (in which potential investors use accounting reports to assess a firm's expected future payoff) and the stewardship role (in which current shareholders rely on the same reports to monitor their risk-averse manager), current firm owners have incentives to engage in earnings management. Such manipulation reduces accounting numbers' stewardship value and leads to inferior risk sharing. They show that when the accounting regime is unbiased and there is uncertainty about the future payoff of the firm, managers have incentives to manage the accounting earnings upward to induce more favorable investors' belief about the firm's prospects. However, the degree of earnings manipulation is lower in the conservative accounting regime because observing a low accounting earnings number does not necessarily mean that the true economic earnings are as low. Consequently, the decline in earnings management improves risk sharing, and thus contract efficiency.

Fifth, conservative accounting could reduce the agency cost of debt also for informational reasons. Because debtholders demand more timely disclosure of bad news than good news (and if firms fail to provide such information, debtholders will price protect and impose a higher cost of capital on the firm), conservative financial statements, that incorporate difficult-to-verify bad but not good news, are more informative from a debtholders' perspective (Guay and Verrecchia, 2006). Firms that report more conservatively also send out a signal to their lenders that they are likely to discontinue unprofitable projects (negative net present value projects) earlier by recognizing losses from these projects into earnings in a timely manner.

Finally, accounting conservatism may preserve creditor value in the event of default (Donovan et al., 2015). Specifically, Donovan et al. (2015) find that creditors of firms with more conservative accounting before default have significantly higher recovery rates and that this positive relation is more pronounced for default firms that violated covenants before the default. They also find that conservative firms have higher asset productivity, shorter bankruptcy resolution, and a significantly higher probability of emerging from bankruptcy. Aier et al. (2014) find that financial reporting conservatism significantly increased for near insolvent firms.

2.2. Hypotheses development

Contracting debt theory points out that debtholder demands accounting conservatism due to its asymmetric payoff compared to shareholders. Creditors' payoffs are an asymmetric function of firm value. When the borrower firm performs poor, debtholder is exposed to a high level of risk in the potential loss, but their payoff is limited to promised interest and principal payments when the firm performs well (Ahmed et al., 2002; Watts, 2003a). To ensure satisfaction of their claims, creditors focus on the lower portion of the borrower's net asset distribution (Townsend, 1979; Watts, 2003a; Donovan et al., 2015).

Conservatism helps creditors monitor and maintain a minimum amount of verifiable net assets within a firm by restricting dividend payments, executive compensation, and value-decreasing investment decisions (Watts, 2003a; LaFond and Watts, 2008). Thus, creditors demand conservatism for early warning of financial deterioration through timely covenant violations and for measurement of the firm's ability to pay debts. Borrowers may respond to this demand shift by incorporating timelier loss recognition in their financial statements. Firms contracting debt have economic incentives to meet the stronger debtholders' demand for conservative accounting because they would be rewarded with a lower cost of debt, more favorable contract terms, or a competitive advantage in acquiring loans (Ahmed et al. 2002; Watts, 2003a; Guay and Verrecchia, 2007; Ball et al., 2008; Suijs, 2008; Zhang 2008; Callen et al., 2009; Beatty et al., 2002; Lee, 2012; Aier et al., 2014; Donelson et al., 2017). Therefore, conservative accounting is likely to be mutually beneficial to both lenders and borrowers.

The accounting literature suggests that accounting conservatism *ex-ante* as well *ex-post* is desirable in enhancing the efficiency of the debt contract (Watts and Zimmerman, 1986; Watts, 2003a and b; Zhang, 2008). *Ex-ante* conservatism accounting implies that borrowers report understated earnings, equity, and book value of net assets in the financial statements before the debt contract date.

Lenders are concerned about default risk. Thus, if conservative reporting provides lenders more timely signals of default risk, thereby mitigating their default risk, lenders are likely to reduce the debt profitability charged to more conservative borrowers in exchange. Really, in assessing a potential debt, a lender would be interested in contracting on a verifiable lower bound of the borrower's asset value which can be provided by accounting conservatism. Furthermore, the more conservative the borrower, the greater the benefits to the lender. In return, firms adjust their financial reporting conservatism in response to the demand from lenders (Gormley et al., 2012; Jayaraman and Shivakumar, 2013). To borrowers, the benefits of use *ex-ante* conservatism accounting may include a lower cost of debt, more favorable debt terms, or a competitive advantage in acquiring debt. Within this framework, for example, Vasvari (2006), Zhang (2008), Lee (2012), Chan and Hsu (2013), Chen and Zhu (2013), Haw et al. (2014), Li (2015) and Goh et al. (2017) find that *ex-ante* conservative borrowers are rewarded

with lower debt contracting costs. Salama and Putnam (2015) find that conservatism is positively associated with the degree of financial leverage. Zeng (2011) and Yasir (2018) find evidence that conservative firm issue more debt as compared to less conservative firms. Sunder et al. (2018) also find that firms with higher conservatism face significantly lower interest spreads on the loans and have less restrictive covenants. These results suggest that *ex-ante* conservatism is a determinant of the level of debt financing as well of the debt cost.

The above discussion leads to our first and second hypotheses:

H_1: Firms with high *ex-ante* conservatism accounting exhibit a greater increase on debt levels compared to those with low *ex-ante* conservatism accounting.

H_2: Firms with high *ex-ante* conservatism accounting exhibit a lower cost of debt compared to those with low *ex-ante* conservatism accounting.

As mentioned above, accounting conservatism *ex-post* is desirable in enhancing the debt contract efficiency. Hence, *ex-post* conservatism accounting is likely to be beneficial to both lenders and borrowers. After a debt is in place, lenders are concerned about unexpected increases in default risk that result from either exogenous business shocks or borrowers' opportunistic behaviors. Given their information disadvantage, lenders may not detect increases in default risk in time and thereby bear uncompensated risk (Zhang, 2008). To provide lenders with updated information on default risk, firm's debt covenants are typically written over the firm's financial accounting numbers. Thus, debt covenants will change with the degree of conservatism in accounting reports. As a result, debtholders demand a higher degree of accounting conservatism from borrowers to protect their debt value from the negative impact of agency conflicts. Conservatism helps creditors monitor and maintain a minimum amount of verifiable net assets within a firm by mitigating wealth appropriations, overinvestment, avoidance of negative NPV projects, reducing earnings management upward, and preserve creditor value in the event of default (Ahmed et al., 2002; Watts, 2003a; Ball and Shivakumar, 2005; Callen et al., 2016; Chen et al., 2007; LaFond and Watts, 2008; Beatty et al., 2008; Zhang, 2008; Nikolaev, 2010; Aier et al., 2014; Donovan et al., 2015). For example, Ahmed et al. (2002) and Callen et al. (2016) find that conservative borrowers are less likely to make unusual payouts to shareholders. Wittenberg-Moerman (2008) finds that the timely incorporation of economic losses in a borrower's financial statements reduces the bid-ask spread at which its loans are traded. Gao (2013) demonstrates that conservatism reduces earnings management and debt renegotiation inefficiency. Srivastava et al. (2015) find that timely loss recognition increases the likelihood of timely closures of unprofitable projects. Biddle et al. (2016) find that conservatism is negatively associated with subsequent bankruptcy risk by creating cushions for bad times and reducing information asymmetry between borrower firms and debtholders.

Ex-post conservatism accounting also will be beneficial to borrowers. *Ex-post* conservatism accounting implies that borrowers report understated earnings, equity, and book value of net assets in the financial statements after the debt contract date. Zhang (2008) argues that borrowers will not reduce a level of conservatism after contracting, because of negative consequences and also because borrowing is a repeated game. In particular, the potential for future renegotiation and additional borrowing can provide the impetus for borrowers to increase conservatism after contracting, because borrowing is not a one-time contract but a continuous process. Beneish and Press (1993) argue that covenant violations lead to higher borrowing costs and require managers to spend time renegotiating loan. For example, lenders are more likely to charge higher interest rates or recall the loans if they believe borrowers have become riskier than at inception of the loan. Therefore, if a borrower's financial condition has deteriorated significantly after contracting, renegotiating terms with the lender will lead to a significant increase in borrowing costs, and covenant breach will be costly (Kim, 2010). For example, Qiang (2007) finds that firms with greater financing costs are more conservative.

By understating net income and assets, conservative reporting reduces the proportion distributable to contracting counterparties, thus permitting cash savings and creates cushions when future earning is risky. Conservatism also promotes efficient reinvestment that increases future cash flows and cushions (García Lara et al., 2016). This cushioning role of conservatism enhances firms' capacities to repay or renegotiate their debts. Therefore, firms also have incentives to use conservative accounting to promote precautionary cash saving, which is, saving cash by reducing expenditures as a response to uncertainty

regarding future income (Almeida et al., 2004; Lee, 2012; Biddle et al., 2016). Borrowers also have incentives to commit to and maintain conservatism accounting after initial debt contracting. Göx and Wagenhofer (2009, 2010) show that a conservative accounting system may be optimal as it maximizes the *ex-ante* probability of obtaining debt financing. Beatty et al. (2008) find that borrowers increase conservatism after borrowing. Franke and Müller (2018) document that conservatism significantly increases following a debt issuance. In addition, firms with a history of commitment to conservatism receive better credit terms in the form of the lower cost of debt (Ahmed et al., 2002; Wittenberg-Moerman, 2008; Zhang, 2008). By committing to reporting conservatively as a general accounting practice, borrowers would be rewarded by paying a lower price for their additional borrowing. Thus, as borrowing is a repeated game, if borrowers deviate from a commitment, there will be negative reputational consequences (Zhang, 2008). The potential for future renegotiation and additional borrowing can provide the impetus for borrowers to increase conservatism after contracting. Thus, reputation is considered a powerful tool for improving contracting efficiency and, thus to a firm's access to debt and to its ability to reduce the cost of debt (Diamond, 1991; Fehr et al., 2009; Nikolaev, 2010). Moreover, borrowers have mechanisms that allow them to credibly commit to a certain level of conservatism, for example, through the use of fixed generally accepted accounting principles in covenants (Wittenberg-Moerman, 2008; Beatty et al., 2002). To summarize, *ex-post* conservatism report may benefit the borrowers by reducing information asymmetries, agency costs of debt, facilitating access to additional debt and avoiding negative reputational consequences.

The above discussion leads to our third hypothesis:

H_3: Firms with prior high debt issuance exhibit more conservatism accounting after borrowing compared to those with low debt issuance.

3. Variable Measurement and Research Design

This section presents the discussion on variable measurement, empirical model specifications, and estimation methods.

3.1. Measuring debt financing and cost of debt

As in García Lara et al. (2016), we measure debt financing, Δ*Debt issuance*, as the future change in new debt issuance (contracting) scaled by current sales. Debt issuance equals long-term debt issuance, minus the reduction in long-term debt, and plus changes in current debt.

Interest rate is widely used as the measure for the cost of debt in the literature (Francis et al., 2005; Pittman and Fortin, 2004; Zhang, 2008; Li, 2015). Prior studies claim that reporting conservatism benefits borrowers by mainly lowering initial interest rates (Ahmed et al., 2002; Zhang, 2008). Portuguese listed companies do not disclose the existence or terms of debt financing. Therefore, besides using the contracted interest rate as a criterion for evaluating the contractual benefits of *ex-ante* reporting conservatism on debt contracting efficiency, as in Pittman and Fortin (2004), Francis et al. (2005), Bliss and Gul (2012) and Goh et al. (2017), we measure the cost of debt, *Cost_Debt*, as the interest expense divided by long-term debt plus current debt.

3.2. Measuring accounting conservatism

Following previous studies, we use an accrual-based proxy to measure accounting conservatism. Therefore, in line with Givoly and Hayn (2000), Ahmed et al. (2002), Ahmed and Duellman (2007), Beatty et al. (2008), Xia and Zhu (2009), Yunos et al. (2010), Li (2010), Sun and Liu (2011), Ahmed and Henry (2012), Xu et al. (2012), Kim et al. (2013), and Alkurdi et al. (2017), the accrual-based measure of conservatism, *CONS-ACC*, is income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one. Positive values of *CONS-ACC* indicate greater conservatism. The intuition underlying this measure is that conservative accounting results in persistently negative accruals (Givoly and Hayn, 2000; Watts, 2003b).

CONS-ACC at *t* is pre-borrowing level of conservatism and conservatism at *t+1* is post-borrowing level of conservatism.

3.3. Regression models and control variables

3.3.1. Association between ex-ante conservatism accounting and post-debt financing level

To test (H_1), whether firms with high *ex-ante* conservatism accounting exhibit a greater increase on debt levels compared to those with low *ex-ante* conservatism accounting, we estimate the following OLS regression:

$$\Delta Debt\ issuance_{it+1} = \beta_0 + \beta_1\ (CONS\text{-}ACC_{it}) + \beta_2\ (Liquidity_{it}) + \beta_3\ (Profitability_{it}) + \beta_4\ (Tangibility_{it}) + \beta_5\ (Growth_{it}) + \beta_6\ (Size_{it}) + \varepsilon_{it} \quad (1)$$

Where:

$\Delta Debt\ issuance_{it+1}$ = is the long-term debt issuance, minus the reduction in long-term debt, plus changes in current debt scaled by current sales for firm i for period t+1.

$CONS\text{-}ACC_{it}$ = is the accrual-based measure of conservatism, defined as the income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one for firm i for period t.

$Liquidity_{it}$ = ratio between cash flow from operating activities and the total assets of firm i for period t.

$Profitability_{it}$ = is the return on equity ratio of firm i for period t.

$Tangibility_{it}$ = ratio between tangible fixed assets and the total assets of firm i for period t.

$Growth_{it}$ = is the market-to-book ratio of firm i for period t.

$Size_{it}$ = logarithm of market value of equity of firm i for period t.

ε_{it} = residual term of firm i for period t.

β_0 is a constant, β_1 to β_6 are the coefficients.

3.3.1.1. Control variables explained

The model also includes variables to control for known determinants of debt financing (Myers and Majluf, 1984; Diamond, 1993; Rajan and Zingales, 1995; Ozkan, 2001; Fama and French, 2002; Barclay et al., 2003; Salama and Putnam, 2015).

Firms with high *liquidity* levels may use these assets to finance their investments. Therefore, liquidity should be negatively related with debt. In this sense, Ozkan (2001) finds that liquidity of firms exerts a negative impact on firms' borrowing decisions.

Profitability increases the availability of internal finance; hence, it reduces the dependence on external funds (Myers and Majluf, 1984). That is, profitable firms will use their internal funds (retained earnings) to finance their operations and investment; thus, they will borrow relatively less than firms with low profitability. In this sense, Rajan and Zingales (1995), Ilyas (2008), Abor (2008), Serraqueiro and Rogão (2009) and Memon et al. (2015) report a negative significant relationship between profitability and debt financing.

Tangible assets are easier to collateralize and they suffer a smaller loss of value when firms go into distress. The previous studies suggest that firms match the maturity of their assets with the maturity of their liabilities. Thus, *tangibility* should be positively related with debt (Charalambakis and Psychoyios, 2012; Koksal et al., 2014). For example, Sanyal and Mann (2010) find that firms with more tangible assets, as potential collateral, are more likely to use external debt in the financial structure, since these assets have a high liquidation value. Rajan and Zingales (1995), Serraqueiro and Rogão (2009), Couto and Ferreira (2010), Memon et al. (2015), and Salama and Putnam (2015) also find that firms with more tangible assets have more debt.

The information asymmetry associated with *growth opportunities* is greater than that associated with assets in place. Consequently, firms with good growth opportunities are expected to have little debt (Myers, 1984; Myers and Majluf, 1984). Myers (1977) argues that shareholders/managers of companies with high growth opportunities have incentives to invest in high-risk projects, suggesting a negative relationship between growth opportunities and debt. In this vein, Smith and Watts (1992), Gaver and Gaver (1993), Barclay et al. (1995), Rajan and Zingales (1995), Fama and French (2002),

Moon and Tandon (2007), and Huang and Ritter (2009) find that debt vary inversely with growth opportunities.

Large firms are more diversified and therefore have less volatile cash flow streams. Consequently, the probability of default is lower, which suggests that large firms would be expected to carry more debt. Diamond (1993) also argues that large established firms have better reputations in the debt markets, which also allows them to carry more debt. For example, Barclay et al. (2003), Abor (2008), Serraqueiro and Rogão (2009), Memon et al. (2015), Salama and Putnam (2015), and Koralun-Bereźnicka (2018) find that firm size is associated with more debt.

3.3.2. Association between ex-ante conservatism accounting and post-debt cost

To test (H_2), whether firms with high *ex-ante* conservatism accounting exhibit a lower cost of debt compared to those with low *ex-ante* conservatism accounting, we estimate the following OLS regression:

$$Cost\_Debt_{it+1} = \beta_0 + \beta_1 (CONS\text{-}ACC_{it}) + \beta_2 (Liquidity_{it}) + \beta_3 (Big4_{it}) + \beta_4 (Tangibility_{it}) + \beta_5 (Leverage_{it}) + \beta_6 (Size_{it}) + \varepsilon_{it} \quad (2)$$

Where:

$Cost\_Debt_{it+1}$ = is the interest expense divided by long-term debt plus current debt for firm i for period t+1.

$CONS\text{-}ACC_{it}$ = is the accrual-based measure of conservatism, defined as the income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one for firm i for period t.

$Liquidity_{it}$ = ratio between cash flow from operating activities and the total assets of firm i for period t.

$Big4_{it}$ = dummy variable: 1 if the auditor is a Big4 and 0 otherwise of firm i for period t.

$Tangibility_{it}$ = ratio between tangible fixed assets and the total assets of firm i for period t.

$Leverage_{it}$ = is the ratio between the book value of all liabilities and the total assets of firm i for period t.

$Size_{it}$ = logarithm of market value of equity of firm i for period t.

ε_{it} = residual term of firm i for period t.

β_0 is a constant, β_1 to β_6 are the coefficients.

3.3.2.1. Control variables explained

Based on prior research on cost of debt capital studies (Petersen and Rajan, 1994; Anderson, Mansi and Reeb, 2003; Pittman and Fortin, 2004; Francis et al. 2005; Qiu and Yu, 2009; Chaney et al., 2011; Karjalainen, 2011; Tee, 2018), the following variables are included in the regression as control variables: Liquidity, whether audited by a big audit firm (BIG4), tangibility, leverage and size.

Firms with high *liquidity* levels are expected to reduce a lenders' perceived risk, because they have higher probability of servicing their loan. This leads to lower cost of debt (Chaney et al., 2011; Tee, 2018). Karjalainen (2011) finds that the cost of debt is inversely associated with firm's liquidity.

Financial statements audited by *Big 4 firms* would be more credible to lenders (Pittman and Fortin, 2004; Mansi et al., 2004; Bliss and Gul, 2012; Tee, 2018). This suggests that Big audit firms would be negatively associated with cost of debt. Pittman and Fortin (2004), Mansi et al. (2004), Karjalainen (2011), Cano-Rodríguez et al. (2016), Gong et al. (2017), Al-Hadi et al. (2017), and Tee (2018) document that the cost of debt is lower for firms audited by a Big 4 auditor.

Tangibility is the proxy for the availability of collaterals in case of default of the debt. Since more collateral gives more security to the lender, this variable is expected to have a negative association with the cost of debt. Aslan and Kumar (2012), Li (2015) Spiceland et al. (2016), La Rosa et al. (2018), and Tee (2018) find that firms with greater tangibility have lower cost of debt.

Firms with higher levels of *leverage* carry a great deal of risk and may increase the likelihood of default or bankruptcy (Anderson et al., 2003). Therefore, a higher leveraged firm should have to pay high costs on its debt. Sengupta (1998), Karjalainen (2011), Aslan and Kumar (2012), Bliss and Gul (2012), Chan and Hsu (2013), Spiceland et al. (2016) and Tee (2018) find that firms with greater levels of leverage incur higher cost of debt.

Large firms tend to have more economies of scale and greater stability, and are therefore less likely to fail and to be liquidated. This should lead to a negative relation between firm size and debt cost. For example, Anderson et al. (2003), Bliss and Gul (2012), Spiceland et al. (2016), Gong et al. (2017), La Rosa et al. (2018), and Ozkaya (2018) find that firm size is associated with lower debt cost.

3.3.3. Association between ex-post conservatism accounting and pre-debt financing level

To test (H_3), whether firms with prior high debt issuance exhibit more conservatism accounting after borrowing compared to those with low debt issuance, we estimate the following OLS regression:

$$CONS\text{-}ACC_{it+1} = \beta_0 + \beta_1 (\Delta Debt\ issuance_t) + \beta_2 (Concentration_{it+1}) + \beta_3 (BComp_{it+1}) + \beta_4 (Big4_{it+1}) + \beta_5 (Profitability_{it+1}) + \beta_6 (Size_{it+1}) + \varepsilon_{it+1} \quad (3)$$

Where:

$CONS\text{-}ACC_{it+1}$ = is the accrual-based measure of conservatism, defined as the income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one for firm i for period t+1.

$\Delta Debt\ issuance_{it}$ = is the long-term debt issuance, minus the reduction in long-term debt, plus changes in current debt scaled by current sales for firm i for period t.

$Concentration_{it+1}$ = proportion of stocks owned by shareholders who own at least 2% of the common stock of firm i for period t+1.

$Bcomp_{it+1}$ = ratio between the number of non-executive directors and the total number of board members of firm i for period t+1.

$Big4_{it+1}$ = dummy variable: 1 if the auditor is a Big4 and 0 otherwise.

$Profitability_{it+1}$ = return on equity ratio of firm i for period t+1.

$Size_{it+1}$ = logarithm of market value of equity of firm i for period t+1.

β_0 is a constant, β_1 to β_6 are the coefficients.

ε_{it+1} = residual term of firm i for period t+1.

3.3.3.1. Control variables explained

The selection of control variables in our regression model is primarily based on prior conservatism accounting literature (Ball et al., 2000; Basu et al., 2002; Ahmed et al., 2002; Chung et al., 2003; Beekes et al., 2004; Bushman and Piotrski, 2006; Ahmed and Duellman, 2007; García Lara et al., 2007; Sun and Lin, 2011; Haw et al., 2012; Majeed et al., 2017; Mohammed et al., 2017; Nasr and Ntim, 2018).

Because of large ownership stake, under-diversified equity and long investment horizon, *large shareholders* have greater preferences for conservative financial reporting so as to reduce litigation cost and to mitigate agency costs (Ball et al., 2000; Qiang, 2007; Blunck, 2009). Chen et al. (2009) and Haw et al. (2012) find that conservatism is positively related to large shareholder ownership.

Non-executive directors (NEDs), because of their independence and specialized expertise, are considered as a particularly powerful monitoring device of executive directors' actions (who are assumed to be opportunistic agents) (Rediker and Seth, 1995). If board composition is a signal of board effectiveness, then the higher the number of NEDs on the board, the lower should be the likelihood of managers to use aggressive (more conservative) accounting. In this vein, Beekes et al. (2004), Ahmed and Duellman (2007), García Lara et al. (2007), Dimitropoulos and Asteriou (2010), Majeed et al. (2017), Mohammed et al. (2017), and Nasr and Ntim (2018) find a positive relationship between NEDs and accounting conservatism.

Auditing is considered an important monitoring mechanism (Jensen and Meckling, 1976; Watts and Zimmerman, 1983). As a result, the auditing process is supposed to serve as a monitoring device that reduces management incentives to manipulate reported earnings. Several studies suggest that higher quality (Big audit firms) auditors adopt more conservatism accounting methods (DeFond and Subramanyam, 1998; Basu et al., 2002; Chung et al., 2003).

High-profitability firms are more likely to adopt conservatism since they can better afford the conservative choice (Ahmed et al., 2002). In addition, managers that performed poorly are more likely

to manage earnings because of the threat of dismissal (Lim, 2011). This suggests a positive relationship between profitability and accounting conservatism. Ahmed et al. (2002) find that high profitability firms employ more conservatism.

Larger firms may face greater political costs relative to small firms' due to higher analyst following and investor scrutiny, which induces them to use more conservative accounting (Watts and Zimmerman, 1986; 1978; Zmijewski and Hagerman, 1981). Therefore, the political cost (size) hypothesis suggests that large firms are more conservative accounting in order to reduce the probability of adverse impact from political exposure. Ahmed et al. (2002), Bushman and Piotrski (2006) and Sun and Lin (2011) find that large firms are more conservative in accounting choices.

4. Sample Selection and Characteristics

The initial sample includes all companies whose stocks are listed in the main market, Euronext Lisbon. A total of 52, 50, 48, 51, 51, 51, 50, 49, 52, 51, 49, 48, 50, 50, and 47 companies were listed at the year-end of 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, and 2016, respectively (749 firm-year observations in total). Therefore, our sample covers 15 years, 2002–2016.

Foreign companies (49 in total) are excluded. Football club companies (11 in total) are excluded, too. Companies not having shares listed in the previous year and companies whose shares were delisted in the following year are also excluded (220 in total). Companies (10 in total) with missing data are also excluded from the study. Financial companies (69 in total) are excluded, too. As a result, the final sample size is 26 non-financial companies per year. These selection procedures result in a maximum of 364 firm-year observations, although the number of observations varies depending on the type of test conducted. This reduced number of observations may influence some results. Nevertheless, this limitation is an immediate consequence of the small size of the Portuguese stock market.

Information on ownership concentration, tangible fixed assets, depreciations, interest expense, income operations, operational cash flows, total assets, total equity, total liability, long-term debt, current debt, audit quality (Big 4 audit firm or non-Big 4 audit firm), board composition, market-to-book ratio, return on equity ratio, and leverage are collected from the Annual Report and Corporate Governance Report. Both Annual Report and Corporate Governance Report are available on-line at www.cmvm.pt. We obtain stock price data from the Euronext Lisbon, which allows measuring the variable firm size (Size).

Table 1 presents the sample descriptive statistics related to our first and second hypotheses. Table 2 presents the sample descriptive statistics related to our third hypothesis.

Table 1 shows that, while Δ*Debt issuance*, ranges between about −3.057 and 9.504, the mean and median are about 0.026 and 0.009. The mean (median) *Cost_Debt* variable is 7.5% (5.3%). The mean (median) *CONS_ACC* is 0.084 (0.063), with a minimum of -0.063 and a maximum of 0.979. This indicates that there is a variation between companies in applying conservatism policies. The mean (median) *Liquidity* is 0.069 (0.072), with a minimum of -0.209 and a maximum of 0.856. Table 1 shows that, while *Profitability*, ranges between about −5.148 and 27.932, the mean and median are about 0.141 and 0.075. In our sample, 67.8% of the companies are audited by BIG4 auditors. While *Tangibility*, ranges between about 0.000 and 4.640, the mean and median are about 0.339 and 0.326. The mean (median) *Growth* is 1.525 (1.024), with a minimum of -12.98 and a maximum of 28.256. *Leverage* variable represents on average 0.777 of the total assets of the company (with a median of 0.732). The mean of firm size (*Size*) is about EUR 980 million with a minimum of EUR 250 thousand and a maximum of EUR 16.345 million.

Table 2 shows that, while *CONS_ACC*, ranges between about −0.662 and 0.979, the mean and median are about 0.083 and 0.061. The mean (median) Δ*Debt issuance* is 0.031 (0.009), with a minimum of −3.057 and a maximum of 5.820. The *Concentration* variable shows, on average, that listed companies in Euronext Lisbon display a large degree of ownership concentration. About 43.4% (with a median of 50%) of the members of the board are NEDs (*Bcomp*), with a minimum of 0.0% and a maximum of 88.8%. Table 2 shows that 74.9% of the companies are audited by BIG4 auditors. The mean (median) *Profit* is 0.157 (0.078), with a minimum of -5.148 and a maximum of 27.932. The mean

Table 1: Summary of descriptive statistics related to H_1 and H_2
Association between *ex-ante* conservatism accounting and post-debt financing level (H_1)
Association between *ex-ante* conservatism accounting and post-debt cost (H_2)

	Mean	Median	Min.	Max.
ΔDebt issuance$_{t+1}$	0.026	0.009	−3.057	9.504
Cost_Debt$_{t+1}$	0.075	0.053	0.004	0.228
CONS_ACC	0.084	0.063	−0.662	0.979
Liquidity	0.069	0.072	−0.209	0.856
Profitability	0.141	0.075	−5.148	27.932
Big4	0.678	1.000	0.000	1.000
Tangibility	0.339	0.326	0.000	4.640
Growth	1.525	1.024	−12.98	28.256
Leverage	0.777	0.732	0.062	4.148
Size	18.915	18.745	12.429	23.517

The sample covers the period 2003–2016 for the dependent variables and the period 2002–2015 for the independent variables and contains 364 observations. Δ*Debt issuance*$_{t+1}$ is the long-term debt issuance, minus the reduction in long-term debt, plus changes in current debt; *Cost_Debt*$_{t+1}$ is the interest expense divided by long-term debt plus current debt; CONS_ACC represents the income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one; *Liquidity* is the cash flow from operating activities divided by total assets; *Profitability* is the return on equity ratio; *Big4* dummy variable which takes a value 1 if the auditor is a Big4 and 0 otherwise; *Tangibility* represents the ratio between tangible fixed assets and the total assets; *Growth* is the market-to-book ratio; *Leverage* represents the ratio between the book value of all liabilities and the total assets; and *Size* represents the firm's size

Table 2: Summary of descriptive statistics related to H_3
Association between *ex-post* conservatism accounting and pre-debt financing level (H_3)

	Mean	Median	Min.	Max.
CONS_ACC	0.083	0.061	−0.662	0.979
ΔDebt issuance$_t$	0.031	0.009	−3.057	5.820
Concentration	0.744	0.773	0.085	0.988
BComp	0.434	0.500	0.000	0.888
Big4	0.749	1.000	0.000	1.000
Profitability	0.157	0.078	−5.148	27.932
Size	18.924	18.743	12.429	23.517

The sample covers the period 2004–2016 for the dependent variable, the period 2003–2015 for the Δ*Debt issuance* variable, and the period 2004–2016 for the remaining independent variables and contains 338 observations. CONS_ACC represents the income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one; Δ*Debt issuance*$_t$ is the long-term debt issuance, minus the reduction in long-term debt, plus changes in current debt; *Concentration* represents the proportion of stocks owned by shareholders who own at least 2% of the common stock; *Bcomp* represents the ratio between the number of NEDs and the total number of board members; *Big4* dummy variable which takes a value 1 if the auditor is a Big4 and 0 otherwise; *Profitability* is the return on equity ratio; and *Size* represents the firm's size

of firm size (*Size*) is about EUR 980 million with a minimum of EUR 250 thousand and a maximum of EUR 16.345 million.

5. Results and Discussion

5.1. Results of H_1

In our first hypothesis, we study whether more conservative firms issue (contract) more debt than less conservative ones. Table 3 reports the results of estimating Equation (1).

Table 3: OLS regression results of H_1

$$\Delta Debt\ issuance_{it+1} = \beta_0 + \beta_1\ (CONS\text{-}ACC_{it}) + \beta_2\ (Liquidity_{it}) + \beta_3\ (Profitability_{it}) + \beta_4\ (Tangibility_{it}) + \beta_5\ (Growth_{it}) + \beta_6\ (Size_{it}) + \varepsilon_{it}$$

Independent variables	Dependent variable: ΔDebt issuance	
	Coefficient	t-test
Constant	0.330	1.910*
CONS_ACC	1.801	2.464**
Liquidity	−3.768	−2.482**
Profitability	0.007	0.163
Tangibility	0.811	3.075***
Growth	−0.133	−6.096***
Size	−0.554	−1.736*
R-squared	12.3%	
Adjusted R-squared	10.9%	
F-statistic	8.382***	

Δ*Debt issuance* is the long-term debt issuance, minus the reduction in long-term debt, plus changes in current debt; CONS_ACC represents the income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one; *Liquidity* is the cash flow from operating activities divided by total assets; *Profitability* is the return on equity ratio; *Tangibility* represents the ratio between tangible fixed assets and the total assets; *Growth* is the market-to-book ratio; and *Size* represents the firm's size

Table 3 shows that *ex-ante* conservatism is positively associated with post-debt financing level. This confirm our hypothesis that firms with high *ex-ante* conservatism accounting exhibit a greater increase on debt levels compared to those with low *ex-ante* conservatism accounting. This result is consistent with the argument that debtholder demands accounting conservatism due to its asymmetric payoff and that firms adjust their financial reporting conservatism in response to the demand from lenders (Zeng, 2011; Gormley et al., 2012; Jayaraman and Shivakumar, 2013; Salama and Putnam, 2015; Yasir, 2018).

Regarding the other variables, included as control variables, we find that *Liquidity*, *Growth* and *Size* vary inversely with debt financing, which confirms the findings of prior studies (Smith and Watts, 1992; Gaver and Gaver, 1993; Barclay et al., 1995; Rajan and Zingales, 1995; Ozkan, 2001; Fama and French, 2002; Barclay et al., 2003; Moon and Tandon, 2007; Ilyas, 2008; Huang and Ritter, 2009; Serraqueiro and Rogão, 2009; Memon et al., 2015; Salama and Putnam, 2015; Koralun-Bereźnicka, 2018). As in Rajan and Zingales (1995), Serraqueiro and Rogão (2009), Couto and Ferreira (2010), Memon et al. (2015) and Salama and Putnam (2015), we find that firms with more tangible assets have more debt.

5.2. Results of H_2

In our second hypothesis, we study whether more conservative firms exhibit lower cost of debt than less conservative ones. Table 4 reports the results of estimating Equation (2).

Consistent with H2, Table 4 shows that the coefficient on *CONS_ACC* is negative, −0.030 ($P < 0.001$), suggesting that firms using more conservative accounting have significantly lower debt costs. This result confirms the findings of Ahmed et al. (2002), Vasvari (2006), Zhang (2008), Lee (2012), Chan and Hsu (2013), Haw et al. (2014), Li (2015), Goh et al. (2017) and Sunder et al. (2018).

Regarding the other variables, included as control variables, we find that *Tangibility* and *Size* are associated with lower debt cost, which confirms the findings of prior studies (Anderson et al., 2003; Aslan and Kumar, 2012; Bliss and Gul, 2012; Spiceland et al., 2016; Gong et al., 2017; Ozkaya, 2018; La Rosa et al., 2018; Tee, 2018). Consistent with prior research (Sengupta, 1998; Karjalainen, 2011; Aslan and Kumar, 2012; Bliss and Gul, 2012; Chan and Hsu, 2013; Spiceland et al., 2016; Tee, 2018) we find that firms with greater levels of leverage incur higher cost of debt.

Table 4: OLS regression results of H_2

$$Cost\_Debt_{it+1} = \beta_0 + \beta_1 (CONS\text{-}ACC_{it}) + \beta_2 (Liquidity_{it}) + \beta_3 (Big4_{it}) + \beta_4 (Tangibility_{it}) + \beta_5 (Leverage_{it}) + \beta_6 (Size_{it}) + \varepsilon_{it}$$

Independent variables	Dependent variable: Cost_Debt	
	Coefficient	t-test
Constant	0.032	0.897
CONS_ACC	−0.039	−3.200***
Liquidity	−0.106	−1.528
Big4	−0.014	−1.447
Tangibility	−0.083	−2.255**
Leverage	0.048	3.542***
Size	−0.011	−4.601***
R-squared	18%	
Adjusted R-squared	16.6%	
F-statistic	13.074***	

Cost_Debt is the interest expense divided by long-term debt plus current debt; CONS_ACC represents the income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one; *Liquidity* is the cash flow from operating activities divided by total assets; *Big4* dummy variable which takes a value 1 if the auditor is a Big4 and 0 otherwise; *Tangibility* represents the ratio between tangible fixed assets and the total assets; *Leverage* represents the ratio between the book value of all liabilities and the total assets; and *Size* represents the firm's size.

5.3. Results of H_3

In our third hypothesis, we study whether firms with prior high debt issuance exhibit more conservatism accounting after borrowing compared to those with low debt issuance. Table 5 reports the regression results of H_3.

Table 5: OLS regression results of H_3

$$CONS\text{-}ACC_{it+1} = \beta_0 + \beta_1 (\Delta Debt\ issuance_t) + \beta_2 (Concentration_{it+1}) + \beta_3 (BComp_{it+1}) + \beta_4 (Big4_{it+1}) + \beta_5 (Profit_{it+1}) + \beta_6 (Size_{it+1}) + \varepsilon_{it+1}$$

Independent variables	Dependent variable: CONS_ACC	
	Coefficient	t-test
Constant	−0.148	−1.742*
ΔDebt issuance	0.082	6.839***
Concentration	0.249	2.004**
BComp	0.137	4.393***
Big4	0.127	1.964**
Profitability	−0.062	−0.382
Size	0.057	5.357***
R-squared	36.9%	
Adjusted R-squared	35.7%	
F-statistic	32.245***	

CONS_ACC represents the income operations plus depreciation less cash flows from operations deflated by average total assets, multiplied by negative one; Δ*Debt issuance* is the long-term debt issuance, minus the reduction in long-term debt, plus changes in current debt; *Concentration* represents the proportion of stocks owned by shareholders who own at least 2% of the common stock; *Bcomp* represents the ratio between the number of NEDs and the total number of board members; *Big4* dummy variable which takes a value 1 if the auditor is a Big4 and 0 otherwise; *Profitability* is the return on equity ratio; and *Size* represents the firm's size.

Table 5 shows that *ex-post* conservatism is positively associated with pre-debt financing level. This confirm our third hypothesis that firms with prior high debt issuance exhibit more conservatism accounting after borrowing compared to those with low debt issuance. This result is consistent with the argument that debtholders demand a higher degree of accounting conservatism from borrowers to protect their debt value from the negative impact of agency conflicts (Ahmed et al., 2002; Watts, 2003a; Ball and Shivakumar, 2005; Callen et al., 2016; Chen et al., 2007; LaFond and Watts, 2008; Beatty et al., 2008; Zhang, 2008; Nikolaev, 2010; Aier et al., 2014; Donovan et al., 2015; Franke and Müller, 2018). Further, *ex-post* conservatism report may benefit the borrowers by reducing information asymmetries, agency costs of debt, facilitating access to additional debt, and avoiding negative reputational consequences (Beneish and Press, 1993; Mohrman, 1996; Beatty et al., 2002; Beatty et al., 2008; Zhang, 2008; Almeida et al., 2004; Lee, 2012; García Lara, et al., 2016; Biddle et al., 2016).

With respect to other variables, included as control variables, we find that *Concentration*, *Bcomp, Big 4,* and *Size* are positively related to conservatism, which confirms the findings of prior research (Ahmed et al., 2002; Beekes et al., 2004; Bushman and Piotrski, 2006; Ahmed and Duellman, 2007; García Lara et al., 2007; Francis and Wang, 2008; Chen et al., 2009; Dimitropoulos and Asteriou, 2010; Sun and Lin, 2011; Haw et al., 2012, Gor, Karakvs and Tasar 2017; Majeed et al., 2017; Mohammed et al., 2017; Nasr and Ntim, 2018).

6. Summary and Conclusions

Literature suggest that conservative financial reporting reduces information asymmetry and facilitates contracting (Holthausen and Watts, 2001; Watts, 2003a; Ball and Shivakumar, 2005; Ahmed and Duellman, 2007; LaFond and Roychowdhury, 2008; LaFond and Watts, 2008; Biddle et al., 2016).

Given that lenders bear downside risk, they demand assurance that the minimum amount of net assets will be sufficient to repay the contracted sum. Conservative accounting effectively satisfies this demand because it results in timelier downward revisions of earnings and book value of net assets, which lead to timelier violation of financial covenants. Conservative accounting prevents wealth expropriation and protects lenders by more quickly transferring important decision rights from loss-making firms to lenders (Watts, 2003a; Ball et al., 2008; Kothari et al., 2009). To borrowers, the benefits of use conservatism accounting may include a lower cost of debt, more favorable debt terms, or a competitive advantage in acquiring debt (Vasvari, 2006; Zhang, 2008; Lee, 2012; Haw et al., 2014). As a result, conservative accounting is likely to be mutually beneficial to both lenders and borrowers.

Therefore, this paper studies whether higher debt firms adopt more conservatism in the prior year to debt contract. We also analyze whether *ex-ante* conservative borrowers are rewarded with lower debt contracting costs. Further, we study whether firms with high debt issuance exhibit more conservatism accounting prior borrowing compared to those with low debt issuance. The empirical findings suggest that the accounting conservatism practices of Portuguese listed firms are influenced by these firms' capital structure. Specifically, our study shows that firms with high *ex-ante* conservatism accounting exhibit a greater increase on debt levels and have lower debt costs compared to those with low *ex-ante* conservatism accounting. In addition, the results indicate that firms with prior high debt issuance exhibit more conservatism accounting after borrowing compared to those with low debt issuance. Overall, our study provides evidence that firms are, on average, committed to their pre-borrowing conservatism level and, therefore, that conservatism is indeed an effective tool to enhance debt-contract efficiency (lower debt cost). In addition, pre-borrowing conservatism is maintained after borrowing.

The findings of this study make the following contributions. First, the results indicate that, on average, conservatism accounting affect the Portuguese listed firms' capital structure. Mainly, the results in this study suggest that debtholders value conservatism and lend more debt and charge lower cost of debt to borrowers that report conservatively. Second, this study also shows that debt financing affects the level of conservatism accounting after initial borrowing using Portuguese data. Third, the findings are relevant for countries with an institutional environment (mainly concentrated ownership) similar to that of Portugal. Fourth, investors may also benefit from the findings because they provide insight into the impact of conservative accounting on debt contracting and debt cost. Fifth, this research is of interest to creditors

who may seek to understand how reporting practices (conservatism) may help them to protect their interests, and reduce information asymmetry through accounting conservatism. Finally, the results could also be of interest to regulators and accounting standard setters because they likely have implications for how borrowers will respond to changes in the extent to which accounting standards are conservative.

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