Financial Security Issuance and Cash Savings through Tax Planning

Abstract

In this paper, we investigate how firms' issuance of equity and debt securities are associated with cash savings through tax planning. According to the pecking order theory of Myers and Majluf (1984), due to higher cost of capital attributed to information asymmetry, firms use the least costly financial resources, such as cash on hand followed by debt issuance and equity issuance to carry out investments. However, the literature on pecking order theory has not considered cash savings through risky tax planning. Since issuance of shares is the most costly and the last resort for raising capital, and issuance of debt is less costly and signals firms' profitability, we predict that firms that issue shares will save more cash via aggressive tax planning than firms that issue debt, which are not expected to engage in as much aggressive tax planning.

Using a sample of U.S. publicly listed firms for the period 1987-2016, we find that an increase in share issuance is associated with a decrease in cash effective tax rate (CASH-ETR), indicating that firms that issue shares save cash by tax planning. We do not find any evidence that debt issuance reduces CASH-ETR or induce tax avoidance behavior. Our findings are robust when we use first difference estimation method, propensity score matching, and gross equity and debt issuances as explanatory variables, instead of net equity and debt issuances. This study provides insights into the interplay between the taxing authority and shareholders, especially when firms raise external capital.

Key words: tax planning, share issuance, debt issuance, financial constraints.

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1 INTRODUCTION

"Looking for year-end cash? Make all the right tax moves — from changing your accounting to buying capital equipment now, rather than later — and you may strike a hidden cash vein."

Leone, 2008. CFO.com

"The avoidance of taxes is the only intellectual pursuit that carries any reward." A quote attributed to *John Maynard Keynes (1883-1946):*

We investigate how firms' issuance of financial securities, such as debt and equity, is associated with corporate tax planning for cash savings.[1] Existing studies examine the relationship between financial constraints and tax planning strategy using various proxies such as Altman Z-scores to measure financial constraints (Chen and Lai, 2012; Edwards, Schwab, and Shevlin, 2016; Law and Mills, 2015). The implicit assumption of these studies is that financially constrained firms are less capable of raising external funds. However, these studies do not consider explicitly on how debt and/or equity issuance may affect tax planning. Disentangling the effects of these two types of financial security issuance on corporate tax planning is important as they indicate or signal two different abilities of raising external capital for investments and may help us understand the interplay between the shareholders and the taxing authority better, especially at the time when firms have to raise funds for investments.

[1]In this study, the terms share-issuance and equity-issuance are used interchangeably.

To motivate the relation between security issuance and risky tax planning for cash savings, we employ pecking order theory, which ranks financial resources for investment according to their level of risk to investors and, in turn, cost to the firm (Myers, 1984). In favor of pecking order theory, Myers and Majluf (1984) argue that, in order to avoid the high costs of financing attributed to information asymmetry, firms use the least costly financial resources first, such as cash on hand followed by debt issuance and they only use costly equity issuance when other financing is not available, to carry out their investment plans. However, pecking order theory does not consider obtaining cash from a risky tax avoidance strategy, which is a potential source for funding investments.[2] Therefore, we investigate whether firms engage in tax avoidance when they are able to raise funds externally through debt and equity issuance. Typically, going to a debt market to raise funds for investment signals a greater level of solvency or profitability (Albring et al., 2011; Best and Zhang, 1993) and may reflect a lesser need to engage in risky tax avoidance strategies. Besides, as Albring et al. (2011) and Meneghetti (2012) imply, when managers issue debt they submit themselves to lenders' monitoring. Hasan et al. (2014) document that debt holders penalize firms for their tax aggressive behavior by imposing higher costs of debt. For these reasons, we predict that debt issuance will be either negatively or not significantly associated with tax avoidance.

Conversely, when firms exhaust their ability to raise debt or when the cost of debt is too high for them, they issue equity to carry out investments. According to pecking order theory, equity issuance is the most costly and the last resort for financing. Leone (2008) noted that a credit crunch or low liquidity leads corporations to save cash from tax planning. We argue that when firms issue

[2]In this paper, we are using aggressive tax planning and tax avoidance synonymously.

equity, they will also engage in such tax planning, which generates additional cash, in order to minimize the cost of capital and amass sufficient funds for their investments. Hence, we expect that equity issuance will be positively associated with tax avoidance.[3]

We test our predictions using cash effective tax rates (CASH-ETR) as the proxy for tax avoidance. CASH-ETR is defined as the total amount of cash taxes paid in a given year over the worldwide pretax income. CASH-ETR is a commonly used proxy for tax planning to generate cash savings, as it reflects both a firm's long-term and short-term tax deferral strategies (see Edwards et al., 2016). We measure share issuance (debt issuance) as the net proceeds from issuing and repurchasing (retiring) shares (debt). We use net share and debt issuance because they reflect the actual need for external cash flow for investments. A negative (positive) relation of our independent variable of interest with CASH-ETR suggests a positive (negative) relation with tax avoidance or cash savings via tax planning because lower ETR represents a higher level of tax avoidance.

We apply ordinary least squares (OLS) regression and control for year and industry fixed effects on a sample of U.S. publicly listed firms for the period 1987-2016. We find that share (debt) issuance has a negative (positive) and statistically significant relationship with CASH-ETR. The results from our sample suggest that a one standard deviation increase in the amount of share (debt) issuance is associated with a 3.82 (3.16) percent decrease (increase) in CASH-ETR, which can be translated into $3.20 million ($2.65 million) cash savings (more tax payments) per firm on

[3]One could argue that the relationship runs in both directions; that is- tax avoidance also reduces firms' need to issue financial securities. Regarding this, extant research suggests that one of the main reasons for tax avoidance behavior is to meet a need for additional cash (Edwards et al., 2016; Law and Mills, 2015). Hence, generating funds externally indicates a need for additional funds for investments. So, we believe the direction of the relation runs from share/debt issuance to tax avoidance. However, to address this potential simultaneity bias, in a robustness check test, we regress CASH-ETR on lagged explanatory variables.

average. Such findings may imply that when firms issue shares, they engage in tax avoidance by reducing CASH-ETR to obtain additional cash for their investments.

We apply a battery of robustness tests to address concerns related to endogeneity or measurement errors. First, we apply propensity score matching to match firms that issue shares (or debt) with similar firms, which do not issue shares (or debt) to address selection bias or model misspecification concern. We document that our results are robust to applying propensity score matching statistical method. We use first difference regression to mitigate correlated omitted variable bias. We regress changes in CASH-ETR between year t and t-1 on changes in explanatory variables between the same years. We find that an increase in debt issuance is associated with an increase in CASH-ETR and an increase in share issuance is associated with a decrease in CASH-ETR. It is also possible that our baseline regression suffers from simultaneity or reverse causality bias. Therefore, we employ a lagged specification of our model by regressing CASH-ETR on lagged explanatory variables. The lagged specification regression models also support our argument that share issuance increases tax avoidance. As we do not believe that the issuance of shares and debt persist from one period to the next, the lagged specification is likely to serve as a causality test for our study. In addition, we find that high share issuance (top quartile observations of the sample) has a positive association with tax avoidance. We also report that share issuance has a positive association with future tax avoidance at year t+1 and t+2 as well as long-term tax avoidance measured by taking three-year average CASH-ETR.

In further analysis, we test whether tax avoidance strategy is related to uncertain tax positions. Effective from December 15, 2006, FASB's Financial Interpretation No. 48 (FIN 48) requires firms to disclose uncertain tax benefits (UTBs) that are less than 50 percent likely to be sustained if a tax audit were conducted. Among other items, FIN 48 also requires firms to disclose the

amount of tax settlements related to UTB with the IRS upon tax audit. We find that while there is no significant association between share issuance and UTBs, there is a negative association between share issuance and tax settlements. This insignificant (significant) relation of share issuance with UTBs (tax settlements) suggests that the tax avoidance strategy induced by share issuance is not based on weak tax positions. This finding may also imply that when firms issue shares, the IRS considers their tax planning favorably and reduces the amount of settlements that arise from their overall uncertain tax positions induced by other factors.

Overall, we contribute both to the capital structure and tax avoidance literature. Specifically, our study complements Law and Mills (2015) and Edwards et al. (2016). They find that when firms are financially constrained, they opt for tax avoidance. However, "financially constrained" conditions may reflect many financial issues and do not shed light on the effect of specific financial conditions, such as those leading to financial security issuances, on tax avoidance. Our evidence suggests that when firms issue equity, they tend to engage in tax avoidance strategies. We also contribute to the debt issuance and tax avoidance literatures by providing evidence that when firms are capable of issuing debt they do not tend to engage in tax avoidance. This evidence contributes to the work of Hasan et al. (2014) who find that tax avoidance increases the costs of borrowing. While Hasan et al. (2014) focus on the consequences of tax avoidance, our study emphasizes the effects of investment needs leading to shares and debt issuance on tax avoidance.

The remainder of the paper is as follows. Section 2 reviews literature and presents arguments leading to our hypotheses. Section 3 describes our sample selection procedure and research design. Results and additional analysis are provided in Sections 4 and 5, respectively. Conclusions are made in section 6.

2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Firms encountering financial constraints experience an increased cost of capital or cost of borrowing (Edwards et al., 2016). In such circumstances, firms tend to exploit all possible means of saving cash internally. One such means is tax avoidance: diverting wealth from the government (tax payables) to shareholders (Law and Mills, 2015). Law and Mills (2015) and Edwards et al. (2016) study the relations between firms' financial constraints and tax avoidance behavior. Law and Mills (2015) use the total number of negative words in firms' annual 10-K filings to proxy for a qualitative measure of financial constraints and find that firms that are more financially constrained have higher unrecognized tax benefit (UTBs) balances, representing more tax aggressiveness. Their study also finds that financial constraints are associated with future tax aggressiveness reflected in future higher UTB balances and effective tax rates (ETR). Edwards et al. (2016) apply both macroeconomic financial constraints, measured by the change in Gross Domestic Product (GDP), and firm-level financial constraints, measured by Altman Z-scores and KZ index (see section 3 for details about the measures). They document that financially constrained firms engage in higher levels of tax avoidance measured by the change in CASH ETR. To proxy for financial constraints, Chen and Lai (2012) use KZ index and WW index developed by Kaplan and Zingales (1997) and Whited and Wu (2006), respectively along with a payout dummy variable. They find evidence of a similar relation between financial constraints and firms' aggressive tax planning.[4][5] However, none of these studies specifically considers how firms' access to external finance (debt and share issuance) could influence tax avoidance behavior.

[4]Dyreng and Markle examine the relation between financial constraints and income shifting by the U.S. multinational firms. They document that financially constrained firms do not shift as much income to foreign countries as their counterpart firms which are not financially constrained.

[5]Many other determinants of tax avoidance are thoroughly reviewed in Shackelford and Shevlin (2001) and Hanlon and Heitzman (2010).

The pecking order theory provides a rational explanation for capital structure. It ranks internal and external financing options according to levels of risk to investors. In turn, it predicts that to avoid high costs of external financing, firms issue stocks to carry out a positive NPV project only after exhausting other sources of internal and external financing, such as cash and debt (including low and high risk debt), respectively (Myers, 1984; Myers and Majluf, 1984). Empirical evidence from Shyam-Sunder and Myers (1999), Jong et al. (2011) and others corroborates that pecking order theory explains capital structure.[6]

Going to a debt market to raise funds for investment signals a greater level of solvency or profitability (Albring et al., 2011; Best and Zhang, 1993), which may increase the stock price of a company. It may also reflect a lesser need to engage in risky tax avoidance strategies. Albring et al. (2011) and Meneghetti (2012) suggest that managers have incentives to issue debt and submit themselves to lenders' monitoring in order to increase the value of their compensation portfolios that are aligned with stock market performance. Hasan et al. (2014) document that tax avoidance affects the cost of debt positively.[7] This finding implies that lenders perceive tax avoidance behavior as risky firm activity and penalize firms with high cost of debt for such behavior. Hence, it is possible that by not engaging in tax avoidance managers want to signal to lenders that the underlying firms are not financially constrained. Thus, we expect that debt issuance will have either no or a positive relationship with CASH-ETR. In other words, debt issuance will have either negative or no association with tax avoidance. Therefore, we state our first hypothesis as follows:

H1: Debt issuance has a non-negative association with cash effective tax rates.

[6]However, some studies such as Fama and French (2005) and, Gatchev, Spindt and Tarhan (2009), among others, do not seem to find evidence in favor of pecking order theory.

[7]By using likelihood of experiencing future extreme negative stock returns as a proxy for stock price crash, Kim et al. (2011) find that there is a positive association tax avoidance and stock price crash, suggesting that through tax avoidance firms hide bad news which may lead to stock price crash when it "crosses a tipping point."

Our prediction is different for equity issuance. From the pecking order theory, we know that equity issuance is the last resort to raise external capital. Since external capital is costly and investment projects tend to require large sums of funds, managers are likely to exploit additional channels of cash savings before accessing capital markets. Leone (2008) hints that a liquidity crisis can incentivize firms to carry out cash savings by tax planning. Thus, we argue that while issuing equity, firms will engage in tax avoidance to generate sufficient funds for investments and to achieve optimum levels of cost of capital.

H2: Share issuance has a negative association with cash effective cash rates.

3 RESEARCH DESIGN

We apply OLS regression to test our hypotheses. The generated standard errors are based on firm-level clustering (robust standard errors). We control for year and industry fixed effects as well as the commonly used determinants of tax avoidance identified in the tax avoidance literature.

We estimate the following model to test our hypotheses. For simplicity, we do not include time and firm subscripts in the model.

$$CashETR = \beta_0 + \beta_1 X + \sum \beta_k Controls + \varepsilon \quad (1)$$

X represents debt issuance for hypothesis 1 and share issuance for hypothesis 2.

Tax planning proxy

Edwards et al. (2016) use CASH-ETR to investigate how financial constraints affect cash savings from tax planning. Similarly, for addressing our research questions of how issuances of shares and debt influence tax planning, CASH-ETR is an ideal measure because it reflects cash savings from tax planning. We construct CASH-ETR as the amount of total taxes paid on

worldwide pretax income adjusted for special items. The federal statutory tax rate in the U.S. until 2017 was 35% of pretax income. If firms pay foreign taxes, they get equivalent amount of tax credits in the U.S.A. Thus, if CASH-ETR is lower than this rate, it is an indication of firm's tax planning for cash savings. Consistent with the tax literature we winsorize CASH-ETR and other variables at the 1st and 99th percentiles. We also bound CASH-ETR between zero and one if observations are negative and greater than one, respectively. ΔCASH-ETR is the change in CASH-ETR between year t and year t-1.

Measuring Share Issuance

Floyd et al. (2015) define share repurchase as the net of gross share repurchase minus gross share issuance. Following their definition of share repurchase, we define share issuance as the net proceeds from issuing and repurchasing shares over total assets. In other words, share issuance equals proceeds from gross share issuance (SSTK) minus share repurchase (PRSTKC) scaled by total asset (AT). If share issuance is negative, we replace it with zero values because negative values indicate that the amount of share repurchase is higher than the total proceeds from share issuance.

Measuring Debt Issuance

Similarly, we measure debt issuance as the net proceeds from issuing and retiring debt. In other words, debt issuance equals proceeds from gross debt issuance (DLTIS) minus debt retirement (DLTR) scaled by total asset (AT). We consider net proceeds because they reflect a firm's overall need for external finance. However, as a robustness test, we use gross share and debt issuance instead of net share and debt issuance.

Controls variables

Consistent with Dyreng et al. (2017), Edwards et al. (2016), Law and Mills (2015) and other tax avoidance studies, we include the following control variables in our model.

Z-score: The Altman (1968) Z-score is a financial constraint measure -calculated as

-1*{3.3* [(PI + XINT)/AT] + 1.2* (WCAP/AT) + (SALE/AT) + 1.4* (RE/AT) + 0.6* [(CHSO *PRCC_F)/LT]}. (2)

The formula is borrowed from Edwards et al. (2016). Z-scores capture the level of financial distress of a firm.

KZ index: Chen and Lai (2012) and Edwards et al. (2016) use KZ index of Kaplan and Zingales (1997) as one of the proxies for financial constraint. The index is calculated as

-1*CashFlowK [(IB + DP)/lag(PPENT)] + 0.28 * Q [(AT + PRCC_F – CSHO - CEQ - TXDB)/AT] + 3.13 * DebtTotalCapital [(DLTT + DLC)/(DLTT + DLC + SEQ)] - 39.36 * DividendsK [(DVC + DVP)/lag(PPENT)] - 1.31* CashK [CHE/lag(PPENT)]. (3)

The formula is borrowed from Edwards et al. (2016). As can be seen from the formula, leverage and Tobin's Q get positive weight whereas operating cash flow, dividend payment and cash reserves get negative weights in the KZ index construction. Firms with higher KZ index are financially more constrained.

We include sales to proxy for firm size. It also captures firms' economic activities for a given year (Edwards et al., 2016). Edwards et al. (2016) point out that, conceptually, it is not clear whether firm size will have a positive or negative effect on tax avoidance. On one hand, large firms have the required resources to carry out transactions that reduce taxes. On the other hand, because large firms are mature, they are likely to have exhausted their scopes of tax reductions, which may lead to higher effective tax rate. We control for SALES GROWTH to capture for changes in firms' economic activity (Edwards et al., 2016). To capture for profitability, we include pretax return on

assets (PROA). We define *leverage* as total debt (long-term debt (DLTT)) scaled by total assets (AT). Leverage captures the extent to which debt can shield taxes (Chen and Lai, 2012). *PPE* is defined as the total gross value of property, plant and equipment (PPEGT) scaled by lagged total asset. PPE captures a firm's capital intensity, which reduces tax liability. To control for expenses related to the research and development, we scale R&D expense (XRD) by total assets (AT). We include foreign income (FI) to control for a firm's foreign operation, which influences tax avoidance behavior. We divide pre-tax income from foreign operations (PIFO) by the total assets (AT). *NOL*- a dummy variable that indicates whether firms have loss carry forward balance (TLCF) from their net operating loss. Δ*NOL* is the amount of change in loss carry forward balance between year t and t-1. We scale it by the prior year total assets (AT).

Sample Selection

We collect financial statement data of North American publicly listed companies from Compustat. We exclude regulated firms (utilities industry - SIC codes 4900-4949) and financial firms (financial industry- SIC codes 6000-6999). We delete firms if their assets and pretax income are missing or negative. We also eliminate observations if CASH-ETR or control variables are missing. However, as a large number of R&D observations are missing, consistent with prior literature, we replace missing R&D with zeroes. We also replace missing foreign income observations with zeros. In order to avoid outlier problems, we winsorize all variables at the 1st and 99th percentiles. Our sample covers the period of 1987-2016.

4 RESULTS

Summary Statistics

In Panel A of Table 1, the descriptive statistics of both the independent variables and the dependent variables are presented. In our sample the average cash effective tax rate (CASH-ETR),

is about 25% of pretax income adjusted for special items. Firms in our sample, on average, pay lower taxes on their pretax income than the federal tax rate, which is 35% of pretax income. The sample mean of gross share and debt issuance are 3.19% and 2.87% of total assets, respectively. The sample average long-term leverage and foreign income are about 17% and 1.23% of total assets, respectively. The average sample profitability (PROA) is about 10.33% of total assets. The R&D and PPE are, on average, 2.9% of sales, and 63.48% of total assets, respectively. We find that our sample average BM is 0.60 meaning book value of equity is 60% of market value of equity. These descriptive statistics are similar to those of Edwards et al. (2016). We also present the descriptive statistics for the changes measures in Panel B of Table 1.

[Insert Panel A of Table 1 about here]

[Insert Panel B of Table 1 about here]

In Figure 1, we present the yearly mean CASH-ETR from 1987 to 2016 for four subsamples related to net debt and share issuance: 1) if net share issuance is positive, 2) if net share issuance is zero, 3) if net debt issuance is positive and 4) if net debt issuance is zero. As can be seen from the graph that among the four subsamples, the lowest yearly mean CASH-ETR is observed when net share issuance is positive. One might argue that firms that issue shares carry out more investment activities and receive tax credits, such as R&D tax credits, that reduce ETR so it does not reflect whether they do it for cash savings. But if we observe the CASH-ETRs of firms that issue debt, we find that for most of the sample period, the yearly mean CASH-ETRs of firms that issue debt (net debt issuance greater than zero) are much higher than those of firms that issue shares.

We also observe that the CASH-ETRs of all subsamples fluctuate together during the sample

period, suggesting that their tax planning could be affected by common shocks or macroeconomic events. For instance, the CASH-ETRs of all subsamples drop drastically between 2002 and 2004, and between 2010 and 2011. These two periods coincide with the 2003 Bush tax cuts, which reduced the tax rate on dividend income at the investor level from 39.6 percent to 15 percent and the 2010 Tax Relief Act, which extended the Bush tax cuts for two more years. In addition, during the recent financial crisis from 2006 to 2008, the mean CASH-ETR went up for all of the subsamples. This observation is surprising because one may naturally think that firms would engage in tax avoidance more aggressively during the financial crisis in order to pay their bills and ensure their survival. It is possible that during the financial crisis firms fail to take advantage of activities that reduce tax liabilities. Lastly, during the beginning of our sample period, all subsamples' average cash ETR were above 30 percent but over time their average CASH-ETR declined, suggesting that on average all kinds of firms are avoiding more taxes than before.

[Insert Figure 1 about here]

Correlations

In Table 2, we present the correlation coefficients of research variables (Pearson correlation coefficients are presented in the upper diagonal and Spearman rank coefficients are presented in the lower diagonal). The correlation coefficient of CASH-ETR and share issue is negative, whereas the correlation coefficient of CASH-ETR and debt issue is positive. While the correlations do not provide definite support for our hypotheses, they offer preliminary support for our expected relations.

[Insert Table 2 about here]

Regression Results

Debt issuance and tax planning

Our first hypothesis predicts that debt issuance would have non-negative association with CASH-ETR, which is our proxy for cash savings from tax planning, as debt issuance signals firms' profitability and, in turn, less need to engage in a tax avoidance strategy. Besides, higher cost of borrowing due to tax avoidance would discourage such tax planning when firms are issuing debt (Hasan et al., 2014). In Table 3, we present the OLS coefficient for the association between debt issuance and CASH-ETR. In Model 1, our specification includes only DEBT-ISSUE. The coefficient of debt issue is positive and significant at the 1 percent level. Graphically, we present this relationship in figure 2A, which shows that as the debt issuance increases, predicted values of CASH-ETR decreases.

In the subsequent two models, we include two different financial constraints separately (Z-score in model 2 and KZ-index in model 3) and the common determinants of tax planning such as ROA, sales, sales growth, foreign income, long-term leverage, property plants and equipment (PPE), inventory, R&D, discretionary accruals, loss carry forward (NOL), ΔNOL, and lagged CASH-ETR (see Dyreng et al., 2017, and Edwards et al., 2016). We also include year fixed effects and industry fixed effects to control for unobservable time and industry effects. In order to address concerns related to serial correlation and heteroscedasticity, we report the t-statistics based on robust standard errors clustered by firms. In both models, we find evidence that debt issuance has statistically significant positive effect on CASH-ETR, indicating that when firms issue debt, they do not carry out a avoidance strategy. This finding provides support for our first hypothesis about the negative relation between debt issuance and tax planning for cash savings. In terms of economic significance, the coefficient of 0.1137 (model2) implies that a one standard deviation

increase in debt issuance is associated with a 3.16 percent decrease in CASH-ETR on average.[8] This rate translates into a $2.65 million increase in tax payments, given that our sample average cash tax payment is $83.74 million.

[Insert Table 3 about here]

[Insert Figure 2A about here]

Share issuance and cash savings from tax planning

In Table 4, we present the results from OLS regressions using five different models. To test hypothesis 2, we include our main independent variable – share issue – in all five models. In model (1), the dependent variable is only SHARE-ISSUE and in the subsequent two models, we replicate model (2) and model (3) of Table 3 by replacing DEBT-ISSUE with SHARE-ISSUE. In model (4) and model (5), we add DEBT-ISSUE, while controlling for Z-score and KZ-index, respectively, along with other controls. We find, in all of the models of Table 4, that the coefficients of SHARE-ISSUE are negative and statistically significant at the one percent level, indicating that firms issuing shares engage in tax avoidance strategies that reduce CASH-ETR. The predicted values of CASH-ETR by share issuance, presented in Figure 2B, also support this result. These findings provide support for our second hypothesis.

The results presented in Tables 3 and 4 indicate that, when firms issue shares, they engage in tax avoidance to obtain additional cash internally to avoid higher costs of external capital. Our findings echo the pecking order theory (of Myers and Majluf (1984), which suggests that share issuance should be the last resort of financing – to avoid higher costs of capital attributable to information asymmetry between insiders and outsiders. We argue, based on our sample evidence,

[8]The economic significance is calculated as coefficient value multiplied by one standard deviation of debt issue deflated by the mean CASH-ETR: 0.1137*0.0702/0.2519=0.0316.

that firms view raising capital for investments through debt issuance as less risky and/or cheaper than raising it through a tax avoidance strategy.

[Insert Table 4 about here]

[Insert Figure 2B about here]

For economic significance, the coefficient value of -0.0922 (Model 2) means that a one standard deviation increase in share issuance is associated with 3.82 percent decrease in average CASH-ETR. As we mentioned above, because our sample average cash tax payment is $83.74 million, the 3.82 percent decrease in CASH-ETR is equivalent to $3.20 million cash savings per firm on average.

5 ADDITIONAL ANALYSIS

High debt and share issuance and CASH-ETR

The evidence we have provided so far indicates that while on average share issuance has negative impact on CASH-ETR, debt issuance has positive impact on CASH-ETR. To provide additional evidence, we create two subsamples by constructing two dummy variables. High-share-issue (high-debt-issue) is a dummy variable, which equals one if a firm's share (debt) issuance is above the third quartile of the sample and zero otherwise. We argue that firms with high level of share (debt) issuance will have a greater negative (positive) impact on CASH-ETR than those with low or no share (debt) issuance. In Panel A of Table 5, we report the results of estimating three models to demonstrate the effect of high level of share issuance and debt issuance on CASH-ETR. In Model 1 (Model 2), we find that the coefficient of high-share-issue (high-debt-issue) is negative (positive) and significant at a one percent level. The economic and statistical significance holds when we include both dummy variables in Model 3 reported in Panel A of Table 5.

[Insert Panel A of Table 5 about here]

Evidence based on Nearest-neighbor (NN) matching test

It is possible that our baseline regressions are not properly specified and suffer from selection bias. Therefore, the baseline regression estimates may be biased. To address this concern and to crosscheck our evidence of how the high level of share issuance and debt issuance influence CASH-ETR, we apply a nearest-neighbor matching test. In this test, the treatment group is high-share-issue (high-debt-issue), which equals 1 and the control group is high-share-issue (high-debt-issue) which equals 0. NN matching involves two stages of regressions. In the first stage, using a logit model we match the treatment group with similar characteristics of the control group based on the control variable characteristics. In the second stage, we test the impact of treatment, which is share issuance or debt issuance, respectively, on CASH-ETR compared to the similar group without treatment. The control variables in both stages include Z-score, PROA, Sales, Sales-growth, Book-to-market ratio (BM), foreign income, leverage, PPE, inventory, R&D, Discretionary accruals, loss carryforward (NOL), and change in loss carryforward (ΔNOL). In Model 1 and Model 2 of Panel B, we find that the evidence about the impact of high-share-issue and high-debt-issue on CASH-ETR is similar to the evidence we presented in Panel A of Table 5. Hence, our results are robust to addressing selection bias or model misspecification concerns.

[Insert Panel B of Table 5 about here]

First difference regressions

It is also possible that our baseline regression models suffer from correlated omitted variables. There are a couple of methods that can be applied to address this endogeneity concern. One method is to apply two-stage least squared regressions by using a valid instrument variable that is related to the treatment variable but unrelated to the outcome variable. Another approach is to apply first

difference regressions. Edwards et al. (2016) use the first difference regressions method to investigate the impact of financial constraints on CASH-ETR. As an additional test, we apply the first difference regressions to make sure that we are not capturing spurious estimates. First, we replicate Table 4 of Edwards et al. (2016) in Table 6 to ensure that our first difference models, variables and the estimates are similar to those of Edwards et al. (2016). The main independent variables in the first two models of Table 6 are lagged decile ranks of change measures of financial constraints (i.e. Z score and KZ index). Coefficients on both independent variables are negative and significant at a 1% level, which is consistent with the findings of Edwards et al. (2016). To test the impact of our variables of interest on CASH-ETR, we use current change measures of the financial constraints instead of the lagged decile ranks of the change measures as the rest of our variables in contemporaneous period.[9] We discuss the findings related to our research questions below.

[Insert Table 6 about here]

Changes in debt issuance and tax planning

In Table 7, we present the first difference estimates of the association between debt issuance and CASH-ETR, which means the dependent variable and independent variables are change measures in all of our models presented in Table 7. In Model 1, our specification includes ΔDEBT-ISSUE and the industry fixed effects. In the subsequent two models, we include two different financial constraints (ΔZ in model 2 and ΔKZ in model 3) and the common determinants of tax planning. We report the t-statistics based on robust standard errors clustered by firms. In all three

[9]Two of our control variables are slightly different than those of Edwards et al. (2016). First, instead of total leverage we use long-term leverage and second, we use Kothari et al. (2005) discretionary accrual measure instead of Frank et al. (2009) discretionary accrual measure. However, in the replication table, we use all of the controls variables of Edwards et al. (2016).

models, we find evidence that an increase in debt issuance has a statistically significant positive association with an increase in CASH-ETR suggesting a negative impact of changes in debt issuance on tax avoidance. This finding strengthens our previous support for our first hypothesis about the non-negative relation between debt issuance and tax planning for cash savings.

[Insert Table 7 about here]

Changes in share issuance and cash savings from tax planning

In Table 8, we report estimates from the first difference regressions using five different models. In model (1), the dependent variable is only ΔSHARE-ISSUE and in the subsequent two models, we replicate model (2) and model (3) of Table 7 by replacing ΔDEBT-ISSUE with ΔSHARE-ISSUE. In model (4) and model (5), we include both ΔSHARE-ISSUE and ΔDEBT-ISSUE, while controlling for ΔZ and ΔKZ along with other controls, respectively. We find that, in all of the models, the coefficient of ΔSHARE-ISSUE is negative and significant at a 1 percent level. This finding lends credence to our main results.

[Insert Table 8 about here]

Lagged independent variable and tax planning

While the first difference estimation addresses the omitted correlated variable concern, it does not mitigate the reverse causality problem meaning that CASH-ETR may affect issuance of financial securities. A lagged variable specification addresses the simultaneity problem, in case both the dependent variable and independent variable of interest simultaneously affects each other. To address both the simultaneity and the reverse causality problem, we create lagged share issuance and debt issuance variables along with lagged control variables. The lagged identification is a commonly used method, in the areas of economics, finance and accounting literatures, to test

causality when there is simultaneity or a reverse causality bias. In Model 1 of Table 9, we find that coefficient of lagged share issuance is negative and significant at the one percent level. But the economic significance is found to be lower than reported in Table 4. In Model 3, when we include both the lagged share and debt issuance, both the economic and statistical significance of share issuance remains similar. Overall, the results from Table 9 indicate that firms that issue shares in the prior year have lower CASH-ETR.

Future and long-term CASH-ETR

Relation between share issuance in different periods and CASH-ETR

Long-term investments are carried out over a period of multiple years and require substantial amounts of capital. Therefore, we are interested in examining whether share issuance is a leading indicator of tax avoidance by examining its effects on CASH-ETR in years t+1 and t+2. In Table 10, we regress CASH-ETR in year t+1 and t+2 on share and debt issuance. In model 3, we create long-term CASH-ETR by averaging the CASH-ETR of year t, t+1 and t+2 because one year CASH-ETR may reflect a myopic tax avoidance behavior. In Model (1), the dependent variable is CASH-ETR at year t+1, in model (2), it is CASH-ETR at year t+2 and in model (3), we use 3YR-CASH-ETR. In all of the three models, share issuance in all periods is negatively associated with CASH-ETR at the 1% level. This finding implies that when firms are issuing shares for investments, they engage in a multi-period tax avoidance strategy.

[Insert Table 10 about here]

Gross share and gross debt issuance

So far, we have used net debt and share issuance, which are constructed by deducting debt and shares buyouts from the gross debt and share issuance, respectively, so that we capture the actual

need for external capital. However, in a given year, the gross amounts of debt and share issuances may indicate whether the firm needs to engage in a tax avoidance strategy. Therefore, in this subsection of sensitivity analysis, we replace the net share and debt issuance with gross share and debt issuance. In Table 11, we present the results of the relation between gross share issuance as well as debt issuance and CASH ETR. In Model (1), we regress CASH-ETR on gross share issuance and find that the coefficient of SHARE-ISSUE is negative and statistically significant at the 1% level indicating that an increase in gross share issuance increases cash savings by reducing cash effective tax rates. The relationship is opposite between gross DEBT-ISSUE and CASH-ETR (Model 2). The coefficient of debt issuance is significant at the 5 percent level. Similar to Table 4, in Model (3) of Table 11, we include both gross SHARE-ISSUE and DEBT-ISSUE and observe that their relations with CASH-ETR continue to be similar. Taken together, our sample evidence suggests that, regardless of whether we use gross or net share issuance in the regression models, we find that firms that issue shares tend to reduce cash effective tax rates to generate additional capital for their investments through tax planning.

[Insert Table 11 about here]

Uncertain tax benefits and tax settlements

In this section, we provide evidence whether share issuance is related to uncertain tax positions. The strategy of saving cash taking uncertain tax positions for investments would backfire when the IRS conducts a tax audit. Effective from December 15, 2006, Financial Accounting Standards Board's Interpretation No. 48 (FIN 48) requires firms to disclose their uncertain tax benefits (UTBs), if the tax positions are less than 50 percent likelihood of sustaining upon a tax audit by the IRS. UTBs are treated as liabilities. Existing studies document that firms' tax avoidance is positively associated with UTB balances (Lisowsky et al., 2013, Gupta et al., 2014). For our study,

a positive association between share issuance and UTBs would indicate that tax avoidance induced by share issuance is based on weak positions. On the other hand, an insignificant or negative association between the variables would allow us to rule out the possibility that share issuance induces tax planning based on uncertain tax positions.

FIN 48 also requires firms to disclose the amount of tax settlements with the IRS. The relation of share issuance to the amount of tax settlements with the IRS provides a corroborative evidence regarding uncertain tax positions. In an analytical study, Mills and Sansing (2000, p.85) show that when firms report "both the financial accounting income and taxable income", the IRS is more likely to audit those firms that demonstrate a positive book-tax difference than those with "no book-tax difference". Wilson (2009) provides evidence that some of the firms that participate in tax havens face tax audit settlements and interest/penalties. Along this line, Cinconte et al. (2014) document that firms that report higher levels of unrecognized tax benefits (UTBs) face higher amounts of tax settlements. Hoi, Wu and Zhang (2013) find evidence that bad corporate social responsibility (CSR) is a determinant of tax avoidance and tax settlement. Hence, share issuance may also show a positive relation with the amount of IRS tax settlement to the extent the former induces tax planning leading to uncertain tax positions. Nonetheless, a statistical insignificant result would indicate that share issuance induced tax avoidance is carried out based on strong merits. Moreover, as the government considers firms as their investment partners (Scholes and Wolfson, 1992), it encourages firms to invest by providing R&D tax credits and allowing them to carry their losses forward. Also, share issuance signals investment initiatives and is considered good for the overall economy. Therefore, the IRS may perceive tax avoidance induced by share issuance favorably.

In model 1 of Table 12, we present regression results showing the relationship of share issuance with UTBs, while controlling for debt issuance along with other control variables in the model. The sample period containing UTB and TS measures is between 2007 and 2016 and the sample consists of 9,522 firm-year observations. We find that the coefficient of share issuance is insignificant implying that share issuance does not influence tax planning based on uncertain tax positions. In model 2, we replace the dependent variable with tax settlement. We find the coefficient of share issuance to be negative and significant at the 5 percent level. In terms of economic significance, the coefficient value of -0.5 means that for one percent increase in the amount of share issuance, the amount of tax settlements with the IRS decreases by 0.5 percent. This finding may imply that share issuance induced tax avoidance does not suffer from lack of merits. It may also imply that the taxing authority may treat such tax planning favorably.

[Insert Table 12 about here]

6 CONCLUSIONS

The widespread corporate tax avoidance behavior in the U.S. and elsewhere has drawn a lot of attention in the media and academic research. Recent studies investigate how financial constraints induce firms to save cash through tax avoidance. However, these studies do not consider how the ability of firms to issue debt or equity may influence corporate tax planning. Thus, in this study, we investigate the effect of firms' issuance of financial securities, debt and equity, on corporate tax planning for cash savings. We apply the pecking order theory to predict the relations between tax avoidance and debt or equity financing. Myers and Majluf (1984) argue that in order to avoid high costs of capital in financing investments, firms should use cash first followed by debt and then by equity. Following this argument, we predict that debt issuance would not induce firms to engage in tax avoidance because debt issuance signals firm profitability and lower need to avoid

tax payment for cash savings. In contrast, because equity issuance is the costliest form of financing, we predict that firms would save cash internally through tax planning before issuing equity.

Consistent with our predictions, we find that equity issuance impacts cash savings positively by reducing CASH-ETR whereas the relationship of debt issuance with CASH-ETR is the opposite. Our results imply that, firms may save cash from tax avoidance after debt issuance but not necessarily after equity issuance.

Although we applied lagged specification to rule out simultaneity concern, the major limitation of our study is that we did not test whether financial security issuance and tax planning simultaneously affect each other. If valid instrumental variables are found to capture the simultaneity effect, future research can investigate further into this area. Future studies could also divide equity and debt issues into various levels of risks and investigate whether their association with tax avoidance differs across various risk levels. As information-asymmetry and compensation-incentives are important factors for debt and equity issuance as well as tax avoidance, interaction of debt and equity issuance with information-asymmetry and compensation-incentives may lead to some interesting findings.

REFERENCES

Albring, S. M., Khurana, I. K., Nejadmalayeri, A., & Pereira, R. (2011). Managerial compensation and the debt placement decision. *Journal of Corporate Finance, 17*(5), 1445-1456.

Altman, E. 1968. Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance* 23 (4): 589–609.

Best, R., & Zhang, H. (1993). Alternative information sources and the information content of bank loans. *The Journal of Finance, 48*(4), 1507-1522.

Chen, C., & Lai, S. (2012). *Financial Constraint and Tax Aggressiveness,* Working paper, University of Auckland and Chinese University of Hong Kong.

Ciconte, W., Donohoe, M. P., Lisowsky, P., & Mayberry, M. A. (2016). Predictable uncertainty: The relation between unrecognized tax benefits and future income tax cash outflows. *Available at SSRN 2390150,*

Dyreng, S. D., M. ; Hanlon, and E. L. Maydew. (2008). Long-Run Corporate Tax Avoidance. *The Accounting Review* 83 (1).

Dyreng, S. D. & Markle, K. S. (2016). The effect of financial constraints on income shifting by US multinationals. *The Accounting Review*, 91, 859-881.

Dyreng, S. D., Hanlon, M., Maydew, E. L., & Thornock, J. R. (2017). Changes in corporate effective tax rates over the past 25 years. *Journal of Financial Economics*, *124*(3), 441–463. https://doi.org/10.1016/j.jfineco.2017.04.001

Edwards, A., Schwab, C., & Shevlin, T. (2016). Financial constraints and cash tax savings. The Accounting Review, 91(3) 859-881.

Fama, E. F., & French, K. R. (2005). Financing decisions: Who issues stock? *Journal of Financial Economics, 76*(3), 549-582.

Floyd, E., Li, N., & Skinner, D. J. (2015). Payout policy through the financial crisis: The growth of repurchases and the resilience of dividends. *Journal of Financial Economics, 118*(2), 299-316.

Frank, M. M., Lynch, L., & Rego, S. (2009). Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review* 84 (2), 467–496.

Gatchev, V. A., Spindt, P. A., & Tarhan, V. (2009). How do firms finance their investments?: The relative importance of equity issuance and debt contracting costs. *Journal of Corporate Finance, 15*(2), 179-195.

Gupta, S., Mills, L. F. Mills, and Towery, E. (2014). FIN 48 and Multistate Income Tax Avoidance. *Journal of the American Taxation Association,* 36, 203-31.

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics, 50*(2), 127-178.

Hasan, I., Hoi, C. K. S., Wu, Q., & Zhang, H. (2014). Beauty is in the eye of the beholder: The effect of corporate tax avoidance on the cost of bank loans. *Journal of Financial Economics, 113*(1), 109-130.

Hoi, C.-K., Wu, Q., & Zhang, H. (2013). Is Corporate Social Responsibility (CSR) Associated with Tax Avoidance? Evidence from Irresponsible CSR Activities. *The Accounting Review*, 88 (6), 2025-2059.

Jong, Abe de, Verbeek, Marno, and Verwijmeren, Patrick, 2011. Firm's debt-equity decisions when the static tradeoff theory and the pecking order theory disagree. *Journal of Banking and Finance* 35, 1303-1314.

Kaplan, S., and L. Zingales. 1997. Do investment-cash flow sensitivities provide useful measures of financing constraints? *Quarterly Journal of Economics* 112 (1): 169–215.

Kothari, S. P., Leone, A., and Wasley, C. (2005). Performance Matched Discretionary Accrual Measures. *Journal of Accounting and Economics* 39 (1): 163–97.

Law, K. K., and Mills, L. F. (2015). Taxes and financial constraints: Evidence from linguistic cues. *Journal of Accounting Research, 53*(4), 777-819.

Leone, M. 2008. There's a cash machine in your tax department. CFO.com (December 11). Available at: http://ww2.cfo.com/accountingtax/2008/12/theres-a-cash-machine-in-your-tax-department

Lisowsky, P., Robinson; L. A., and Schmidt, A. (2013). Do Publicly Disclosed Tax Reserves Tell Us About Privately Disclosed Tax Shelter Activity? *Journal of Accounting Research,* 51, 583–629.

Kim, J.-B, Li, Y. and Zhang, L. (2011). Corporate tax avoidance and stock price crash risk: Firm-level analysis. Journal of Financial Economics, 100(3), 639-662.

Meneghetti, C. "Managerial Incentives and the Choice between Public and Bank Debt." *Journal of Corporate Finance*, 18 (2012), 65-91.

Mills, L. F., & Sansing, R. C. (2000). Strategic tax and financial reporting decisions: Theory and evidence. *Contemporary Accounting Research, 17*(1), 85-106.

Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance, 39*(3), 574-592.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics, 13*(2), 187-221.

Scholes, M. S. W., Scholes, Mark A Myron S, and Wolfson, M. A. (1992). *Taxes and business strategy: A planning approach*

Shackelford, D., and T. Shevlin. 2001. Empirical tax research in accounting. Journal of Accounting and Economics 31 (1/3): 321–387.

Shyam-Sunder, L., and Myers, S. C. (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics, 51*(2), 219-244.

Whited, T. M. and Guojun Wu, G. (2006). Financial Constraints Risk, *The Review of Financial Studies*, 19 (2), 531–559. https://doi.org/10.1093/rfs/hhj012

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

APPENDIX

Table A: Variable Definitions

Variable	Definition
CASH-ETR	Three-year average total cash tax payment scaled by three-year average pretax income less special items
UTB	Log transformed amount of unrecognized tax benefits at the end of the year.
Tax Settlement	This item represents decreases to Unrecognized Tax Benefits relating to settlements with taxing authorities. We log transform it after adding 1 to the number.
SHARE-ISSUE	Net proceeds from issuing and repurchasing shares. Gross share issuance (SSTK) minus share repurchase (PRSTKC) scaled by total asset (AT) in year t.
DEBT-ISSUE	Net proceeds from issuing and retiring debt. Gross debt issuance (DLTIS) minus debt retirement (DLTR) scaled by total asset (AT) in year t.
Z-score	The Altman (1968) Z-score is calculated as -1 * {3.3* [(PI + XINT)/AT] + 1.2* (WCAP/AT) + (SALE/AT) + 1.4* (RE/AT) + 0.6 * [(CHSO * PRCC_F)/LT]}.
KZ index	The Kaplan and Zingales (1997) financial constraint index is calculated as -1*CashFlowK [(IB + DP)/lag (PPENT)] + 0.28 * Q [(AT + PRCC_F – CSHO - CEQ - TXDB)/AT] + 3.13 * DebtTotalCapital [(DLTT + DLC)/(DLTT + DLC + SEQ)] - 39.36 * DividendsK [(DVC + DVP)/lag(PPENT)] - 1.31* CashK [CHE/lag(PPENT)].
SALES	Logarithm of one plus the amount of sales denoted in million dollars.
SALES GROWTH	The change in sales between year t and year t-1 scaled by sales of year t-1.
DisAccruals	Discretionary accruals measured following Kothari et al. (2005)
LEVERAGE	Long-term debt scaled by total assets
R&D	R&D expense scaled by assets
PROA	Pretax income scaled by total assets. Operating cash flow scaled by total assets
PPE	Gross property plant and equipment scaled by lagged total assets
F-Income	Foreign income scaled by lagged assets (AT). If foreign income values are missing values, we set them to zero.
Inventory	Total inventory (INVT) scaled by lagged total asset.
NOL	Dummy variable which equals one if a firm has a positive loss carry forward and zero otherwise.
ΔNOL	Change in tax loss carry forward (TLCF) between current year and prior year scaled by lagged total asset (AT)

Table 1: Summary Statistics

Panel A: Level variable

VARIABLE	N	SD	MEAN	P25	P50	P75	P90
CASH-ETR	63,079	0.2154	0.2519	0.0766	0.2324	0.3570	0.4865
SHARE ISSUE	63,079	0.1044	0.0319	0.00	0.00	0.0070	0.0687
DEBT ISSUE	63,079	0.0702	0.0287	0.00	0.00	0.0202	0.0986
Z-SCORE	63,079	7.8406	-5.1451	-5.7828	-3.7091	-2.4330	-1.556
KZ	63,079	40.071	-9.5535	-5.6391	-1.2692	0.5472	1.48160
PROA	63,079	0.0814	0.1033	0.0453	0.0844	0.1391	0.2075
SALES	63,079	2.1087	5.74787	4.25975	5.6839	7.1986	8.58610
SALES_GROWTH	63,079	0.5972	0.2116	0.0152	0.1046	0.2493	0.5052
BM	63,079	0.7426	0.6006	0.2889	0.4850	0.78198	1.2010
FINCOME	63,079	0.0287	0.0123	0.00	0.00	0.0088	0.0509
LEVERAGE	63,079	0.1711	0.1694	0.008	0.1311	0.2730	0.4082
PPE	63,079	0.4860	0.6349	0.2789	0.5259	0.8738	1.2432
INVENTORY	63,079	0.1771	0.1683	0.0194	0.1223	0.2515	0.4102
RD	63,079	0.1222	0.0296	0.00	0.00	0.0271	0.0989
DisAccruals	63,079	0.1338	0.0524	-0.0117	0.0362	0.0962	0.1791
NOL	63,079	0.4883	0.6073	0.00	1.00	1.00	1.00

Note: All variables are defined in Table A.

Panel B: Summary Statistics of change variables.

VARIABLE	N	SD	MEAN	P25	P50	P75	P90
ΔCASH-ETR	43,289	0.2293	0.0144	-0.0656	0.005	0.093	0.2366
ΔSHARE-ISSUE	43,289	0.1031	-0.0146	-0.0015	0.00	0.0004	0.0096
ΔDEBT-ISSUE	43,289	0.0902	-0.0020	0.00	0.00	0.002	0.0748
ΔZ	43,289	4.5516	0.1386	-0.5447	-0.0173	0.5764	1.8689
ΔKZ	43,289	28.088	0.6896	-0.6566	-0.0458	0.5540	2.7680
ΔPROA	43,289	0.0591	-0.0028	-0.0266	-0.00	0.0294	0.0532

ΔSALES	43,289	0.2296	0.1157	0.0089	0.0875	0.1938	0.3444
ΔSALES_GRO~H	43,289	0.540	-0.0436	-0.1243	-0.0126	0.0860	0.2516
ΔBM	43,289	0.4472	0.0338	-0.0843	0.00961	0.1241	0.3244
ΔFINCOME	43,289	0.0159	0.0003	0.00	0.00	0.00	0.0086
ΔLEVERAGE	43,289	0.0798	0.0020	-0.0251	-0.00	0.0135	0.0759
ΔPPE	43,289	0.2139	-0.0105	-0.04412	0.0025	0.0449	0.1156
ΔINVENTORY	43,289	0.0736	-0.0047	-0.01504	0.00	0.0103	0.0458
ΔRD	43,289	0.0161	0.0005	0.00	0.00	0.00	0.0047
Δ DisAccruals	43,289	0.1323	0.0003	-0.0542	0.0012	0.0566	0.1286
ΔNOL	43,289	0.2563	0.0089	0.00	0.00	0.00	0.00

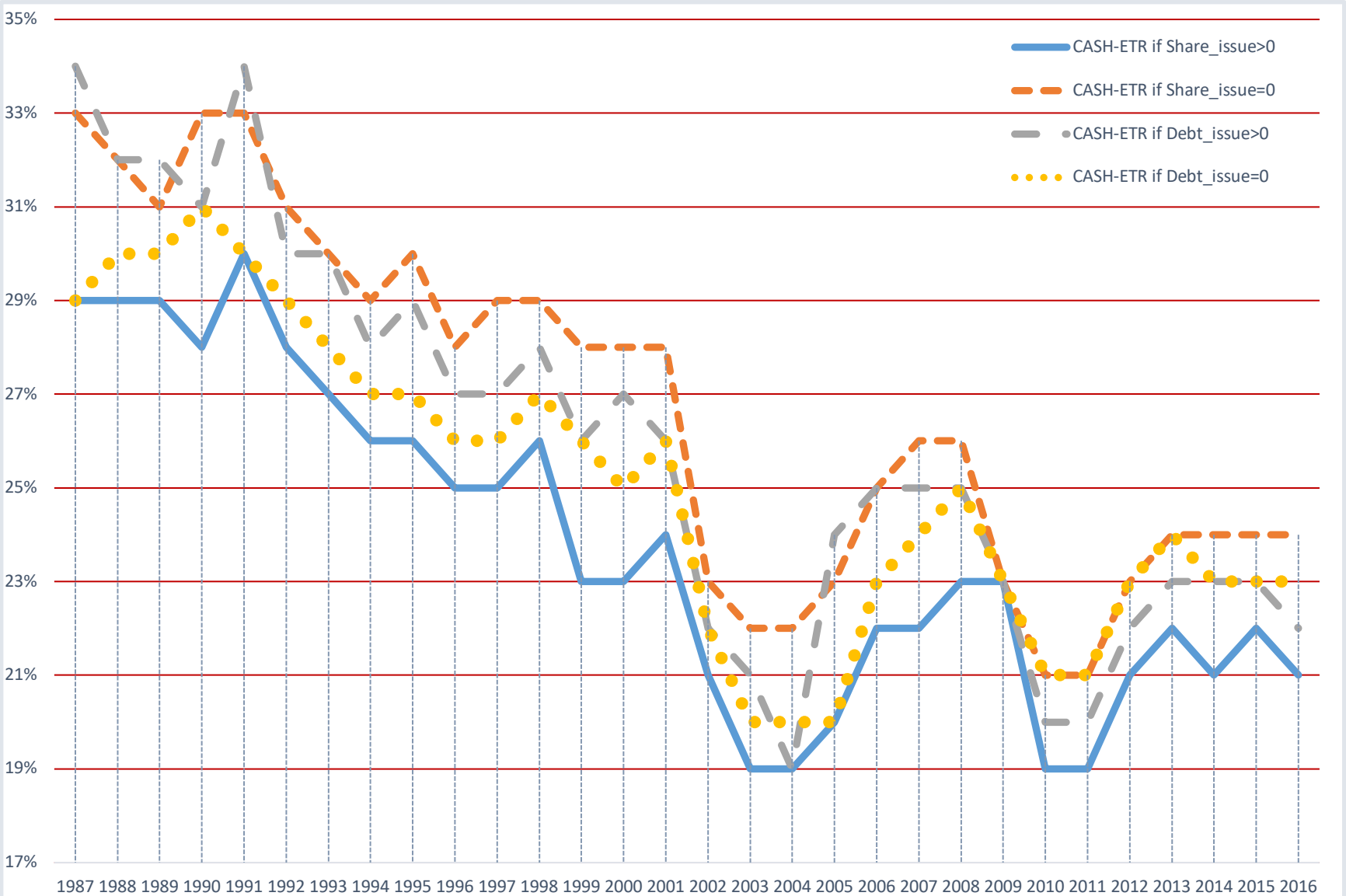

Figure 1

Yearly mean of CASH ETR for share and debt issuances

Table 2: Correlation Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) CASH-ETR		-0.093	0.027	-0.164	-0.064	0.111	0.143	-0.101	0.043	0.035	-0.032	-0.044	0.144	-0.057	-0.020	-0.297
(2) SHARE-ISSUE	-0.065		-0.048	-0.157	-0.059	0.025	-0.172	0.336	-0.190	-0.053	-0.099	-0.035	0.013	0.093	0.084	0.008
(3) DEBT-ISSUE	0.009	-0.036		0.272	0.209	-0.134	0.160	0.119	-0.019	0.026	0.438	0.166	0.016	-0.108	0.102	0.014
(4) Z-SCORE	-0.016	-0.160	0.131		0.481	-0.575	0.165	-0.172	0.309	-0.013	0.617	0.215	-0.164	-0.195	0.071	0.243
(5) KZ	0.024	-0.158	0.010	0.139		-0.362	0.087	-0.051	0.182	-0.110	0.550	0.508	0.049	-0.305	0.091	0.038
(6) PROA	-0.008	0.034	-0.084	-0.288	-0.191		-0.013	0.185	-0.401	0.082	-0.307	-0.051	0.028	0.073	-0.057	-0.211
(7) SALES	0.085	-0.194	0.033	0.112	0.126	-0.063		-0.145	-0.144	0.319	0.330	0.091	-0.042	-0.065	-0.126	0.113
(8) SALES GROWTH	-0.100	0.226	0.101	-0.106	-0.112	0.066	-0.131		-0.218	-0.048	-0.066	-0.010	0.022	0.020	0.096	-0.032
(9) BM	0.059	-0.093	-0.061	0.053	0.065	-0.230	-0.100	-0.053		-0.136	-0.022	0.059	0.136	-0.159	0.063	-0.039
(10) FINCOME	-0.019	-0.047	0.004	-0.016	0.005	0.126	0.255	-0.021	-0.095		0.035	-0.073	0.014	0.237	-0.055	0.147
(11) LEVERAGE	-0.041	-0.118	0.391	0.302	0.138	-0.269	0.254	-0.038	-0.098	-0.030		0.267	-0.057	-0.238	0.019	0.098
(12) PPE	-0.076	0.022	0.130	0.122	0.190	-0.065	0.031	0.118	0.009	-0.069	0.204		-0.075	-0.242	0.111	-0.055
(13) INVENTORY	0.097	0.065	0.032	-0.025	0.047	0.009	-0.095	0.073	0.062	-0.045	-0.105	-0.162		0.076	0.100	-0.149
(14) RD	-0.057	0.107	0.001	0.038	-0.074	0.058	-0.099	0.031	-0.060	0.053	-0.106	-0.121	-0.060		-0.049	0.117
(15) DiscAccruals	-0.035	0.172	0.077	0.027	-0.007	0.045	-0.162	0.175	-0.018	-0.044	-0.008	0.114	0.135	0.051		0.018
(16) NOL	-0.238	-0.033	0.002	0.114	0.008	-0.186	0.106	0.014	-0.021	0.132	0.104	-0.024	-0.153	0.067	0.032	

Note: Lower-triangular cells report Pearson's correlation coefficients, upper-triangular cells are Spearman's rank correlation. All variables are defined in Table A

Figure 2A: predicted value of CASH-ETR by debt issuance

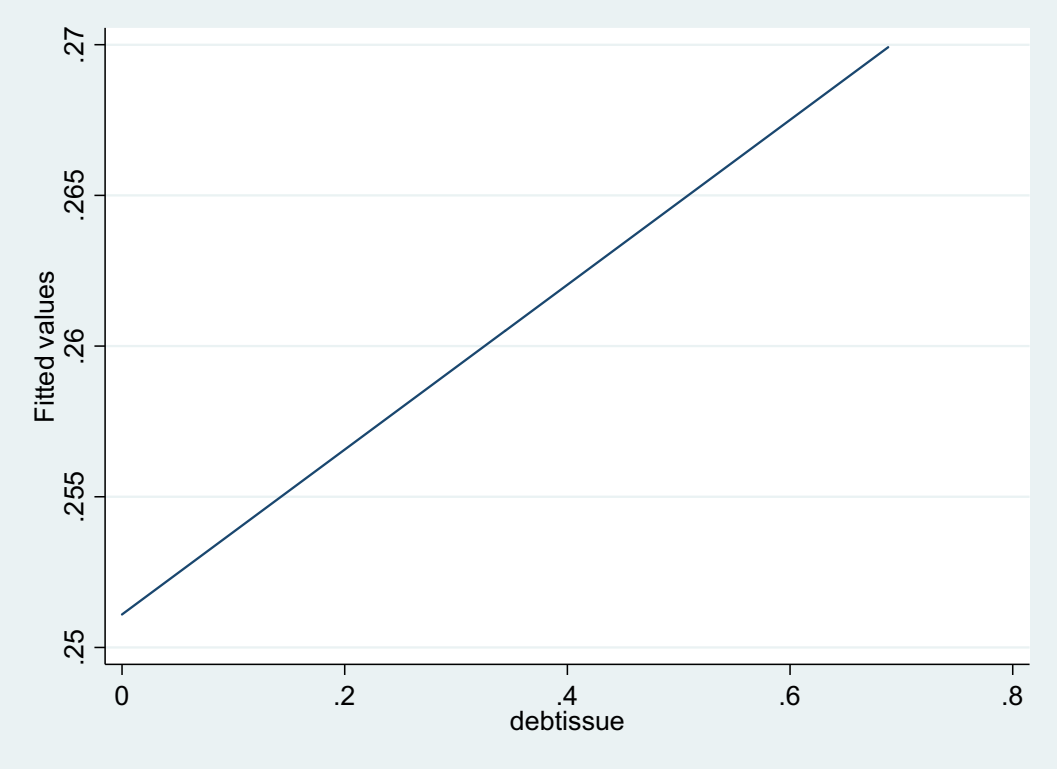

Figure 2B: predicted value of CASH-ETR by share issuance

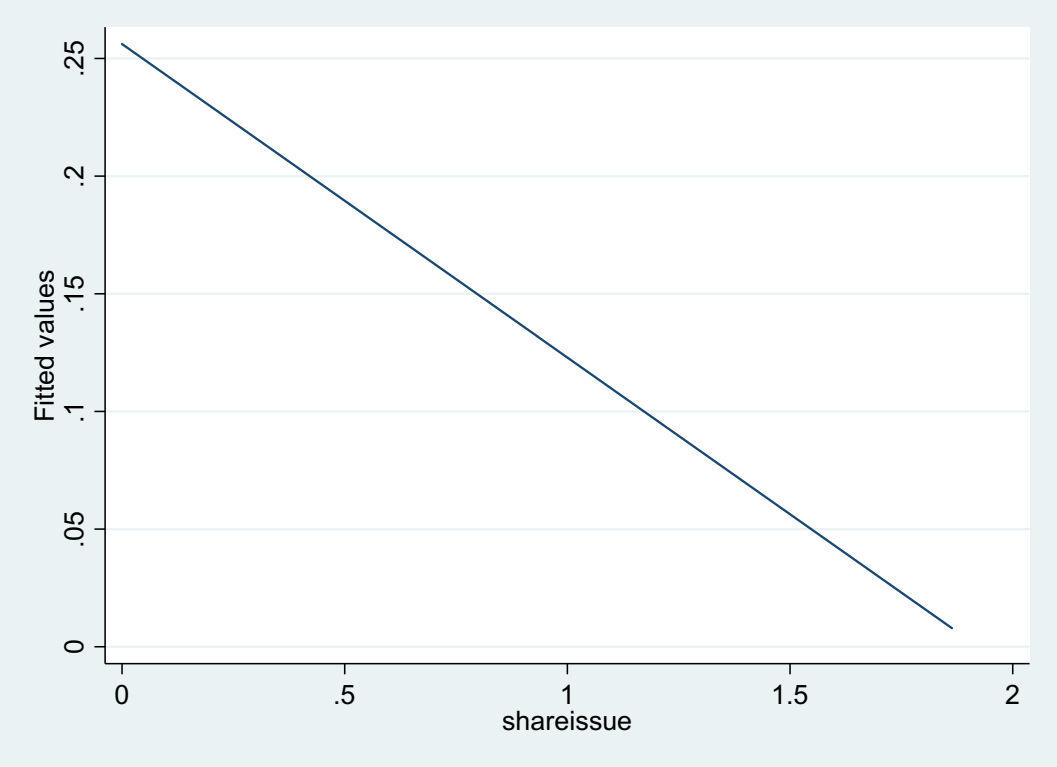

Table 3: OLS regressions of CASH-ETR on debt issuance

VARIABLES	(1) CASH-ETR	(2) CASH-ETR	(3) CASH-ETR
DEBT-ISSUE	0.0458***	0.1137***	0.1127***
	(3.544)	(7.004)	(6.949)
Z-SCORE		-0.0000	
		(-0.206)	
KZ-SCORE			-0.0000
			(-1.181)
ROA		-0.1065***	-0.1083***
		(-5.906)	(-6.252)
SALES		0.0062***	0.0063***
		(8.455)	(8.505)
SALES GROWTH		-0.0485***	-0.0486***
		(-11.979)	(-12.066)
BM		0.0105***	0.0105***
		(4.283)	(4.286)
F-INCOME		-0.1662***	-0.1656***
		(-4.120)	(-4.111)
LEVERAGE		-0.0804***	-0.0804***
		(-9.210)	(-9.340)
PPE		-0.0223***	-0.0218***
		(-7.044)	(-6.831)
INVENTORY		0.0376***	0.0383***
		(4.188)	(4.263)
R&D		-0.1682***	-0.1681***
		(-6.935)	(-7.023)
DiscAccruals		0.0591***	0.0595***
		(5.895)	(5.914)
NOL		-0.0551***	-0.0551***
		(-20.506)	(-20.504)
ΔNOL		0.0309***	0.0308***
		(7.823)	(7.808)
$CASH\text{-}ETR_{t-1}$		0.2858***	0.2858***
		(36.428)	(36.426)
CONSTANT	0.2506***	0.2071***	0.2060***
	(172.329)	(23.351)	(23.191)
INDUSTRY FE	YES	YES	YES
YEAR FE	NO	YES	YES
OBSERVATIONS	63,079	43,289	43,289
R^2	0.026	0.185	0.185
Adjusted R^2	0.025	0.183	0.183

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 4: OLS regressions of CASH-ETR on share issuance and debt issuance

VARIABLES	(1) CASH-ETR	(2) CASH-ETR	(3) CASH-ETR	(4) CASH-ETR	(5) CASH-ETR
SHARE-ISSUE	-0.1182***	-0.0922***	-0.0903***	-0.0879***	-0.0859***
	(-14.144)	(-5.121)	(-5.076)	(-4.867)	(-4.803)
DEBT-ISSUE				0.1113***	0.1101***
				(6.854)	(6.787)
Z-SCORE		-0.0002		-0.0002	
		(-0.928)		(-0.970)	
KZ-SCORE			-0.0001*		-0.0000
			(-1.667)		(-1.329)
ROA		-0.1170***	-0.1164***	-0.1150***	-0.1135***
		(-6.418)	(-6.695)	(-6.305)	(-6.517)
SALES		0.0059***	0.0059***	0.0061***	0.0061***
		(7.983)	(8.032)	(8.282)	(8.293)
SALES GROWTH		-0.0430***	-0.0432***	-0.0458***	-0.0458***
		(-11.061)	(-11.122)	(-11.327)	(-11.378)
BM		0.0097***	0.0096***	0.0099***	0.0098***
		(3.975)	(3.936)	(4.033)	(3.990)
F-INCOME		-0.1557***	-0.1560***	-0.1653***	-0.1658***
		(-3.874)	(-3.887)	(-4.100)	(-4.118)
LEVERAGE		-0.0616***	-0.0628***	-0.0818***	-0.0828***
		(-7.811)	(-8.105)	(-9.356)	(-9.600)
PPE		-0.0206***	-0.0200***	-0.0221***	-0.0217***
		(-6.526)	(-6.304)	(-6.975)	(-6.794)
INVENTORY		0.0438***	0.0443***	0.0387***	0.0391***
		(4.918)	(4.979)	(4.319)	(4.361)
R&D		-0.1603***	-0.1583***	-0.1673***	-0.1650***
		(-6.620)	(-6.634)	(-6.896)	(-6.901)
DiscAccruals		0.0662***	0.0666***	0.0632***	0.0635***
		(6.584)	(6.607)	(6.281)	(6.297)
NOL		-0.0556***	-0.0557***	-0.0549***	-0.0550***
		(-20.738)	(-20.759)	(-20.442)	(-20.474)
ΔNOL		0.0317***	0.0317***	0.0309***	0.0309***
		(8.031)	(8.024)	(7.825)	(7.827)
$CASH\text{-}ETR_{t-1}$		0.2853***	0.2854***	0.2848***	0.2849***
		(36.296)	(36.301)	(36.252)	(36.260)
CONSTANT	0.2557***	0.2084***	0.2078***	0.2089***	0.2087***
	(177.963)	(23.527)	(23.414)	(23.547)	(23.471)
INDUSTRY FE	YES	YES	YES	YES	YES
YEAR FE	NO	YES	YES	YES	YES
OBSERVATIONS	63,079	43,289	43,289	43,289	43,289
R^2	0.029	0.185	0.185	0.186	0.186
Adjusted R^2	0.021	0.183	0.183	0.184	0.184

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 5: Effect of CASH-ETR on high share issuance and high debt issuance

Panel A: OLS Regressions

VARIABLES	(1) CASH-ETR	(2) CASH-ETR	(3) CASH-ETR
HIGH-SHARE-ISSUE	-0.0198***		-0.0197***
	(-8.239)		(-8.181)
HIGH-DEBT-ISSUE		0.0100***	0.0098***
		(4.257)	(4.173)
Z-SCORE	-0.0002	-0.0000	-0.0002
	(-0.910)	(-0.232)	(-1.008)
ROA	-0.1131***	-0.1053***	-0.1103***
	(-6.282)	(-5.835)	(-6.119)
SALES	0.0058***	0.0059***	0.0057***
	(7.876)	(8.006)	(7.730)
SALES GROWTH	-0.0421***	-0.0467***	-0.0430***
	(-11.077)	(-11.786)	(-11.137)
BM	0.0089***	0.0104***	0.0089***
	(3.657)	(4.224)	(3.650)
F-INCOME	-0.1590***	-0.1620***	-0.1645***
	(-3.967)	(-4.023)	(-4.098)
LEVERAGE	-0.0628***	-0.0691***	-0.0719***
	(-7.967)	(-8.284)	(-8.615)
PPE	-0.0210***	-0.0216***	-0.0218***
	(-6.665)	(-6.818)	(-6.890)
INVENTORY	0.0440***	0.0399***	0.0412***
	(4.953)	(4.452)	(4.618)
R&D	-0.1477***	-0.1624***	-0.1491***
	(-6.082)	(-6.712)	(-6.141)
DiscAccruals	0.0654***	0.0598***	0.0632***
	(6.536)	(5.960)	(6.312)
NOL	-0.0553***	-0.0555***	-0.0550***
	(-20.648)	(-20.640)	(-20.482)
ΔNOL	0.0315***	0.0314***	0.0312***
	(7.997)	(7.954)	(7.918)
$CASH\text{-}ETR_{t-1}$	0.2843***	0.2863***	0.2843***
	(36.078)	(36.469)	(36.068)
CONSTANT	0.2104***	0.2068***	0.2106***
	(23.798)	(23.316)	(23.791)
INDUSTRY FE	YES	YES	YES
YEAR FE	YES	YES	YES
OBSERVATIONS	43,289	43,289	43,289
R^2	0.185	0.184	0.186
Adjusted R^2	0.184	0.182	0.184

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 5: Panel B Nearest-neighbor Matching

VARIABLES	(1) CASH-ETR	(2) CASH-ETR
HIGH-SHARE-ISSUE	-0.018***	
	(-6.08)	
HIGH-DEBT-ISSUE		0.0111***
		(3.96)
OBSERVATIONS	43,289	43,289

Z-statistics are reported in parenthesis.

Table 6: Replication of Table 4 of Edwards et al. (2016)- regressions of changes in CASH-ETR on changes in Z-score and KZ index.

VARIABLES	(2) ΔCASH-ETR	(1) ΔCASH-ETR
ΔZ-Score$_{t-1}$		-0.0037***
		(-7.756)
ΔKZ $_{t-1}$	-0.0057***	
	(-12.777)	
ΔROA	-0.5648***	-0.5810***
	(-13.421)	(-13.714)
ΔSALES	0.0215***	0.0164**
	(2.989)	(2.286)
ΔSALES GROWTH	-0.0363***	-0.0327***
	(-6.275)	(-5.823)
ΔBM	0.0123**	0.0104**
	(2.532)	(2.142)
ΔF-INCOME	-0.7302***	-0.7581***
	(-6.843)	(-7.095)
ΔLEVERAGE	0.0168	0.0166
	(1.047)	(1.030)
ΔPPE	-0.0048	-0.0150
	(-0.505)	(-1.567)
ΔINVENTORY	-0.0296	-0.0501*
	(-1.078)	(-1.804)
ΔR&D	0.0204	0.0323
	(0.198)	(0.311)
ΔDiscAccruals-Frank	-0.0767***	-0.0652***
	(-4.926)	(-4.173)
ΔNOL	-0.0219***	-0.0218***
	(-4.197)	(-4.137)
CONSTANT	0.0282***	0.0196***
	(13.304)	(8.488)
OBSERVATIONS	31,275	31,275
R^2	0.046	0.043
Adjusted R^2	0.0437	0.0404

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 7: Regressions of changes in CASH-ETR on changes in debt issuance.

VARIABLES	(1) ΔCASH-ETR	(2) ΔCASH-ETR	(3) ΔCASH-ETR
ΔDEBT-ISSUE	0.0626***	0.0761***	0.0740***
	(4.623)	(4.379)	(4.262)
ΔZ		-0.0009***	
		(-4.171)	
ΔKZ			-0.0000
			(-0.233)
ΔROA		-0.6192***	-0.6074***
		(-19.336)	(-19.190)
ΔSALES		0.0170***	0.0159***
		(2.997)	(2.784)
ΔSALES GROWTH		-0.0186***	-0.0182***
		(-6.628)	(-6.516)
ΔBM		0.0143***	0.0133***
		(4.316)	(4.058)
ΔF-INCOME		-0.7273***	-0.7299***
		(-7.778)	(-7.813)
ΔLEVERAGE		-0.0611***	-0.0673***
		(-3.252)	(-3.601)
ΔPPE		-0.0197***	-0.0198***
		(-2.854)	(-2.879)
ΔINVENTORY		-0.1244***	-0.1255***
		(-5.864)	(-5.910)
ΔR&D		0.1243	0.1163
		(1.608)	(1.501)
ΔDiscAccruals		0.1198***	0.1205***
		(11.077)	(11.138)
ΔNOL		-0.0254***	-0.0254***
		(-5.507)	(-5.505)
CONSTANT	0.0144***	0.0095***	0.0096***
	(19.605)	(9.389)	(9.490)
OBSERVATIONS	43,289	43,289	43,289
R^2	0.0015	0.041	0.041
Adjusted R^2	0.0001	0.0394	0.0391

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 8: Regressions of changes in CASH-ETR on changes in share issuance and changes in debt issuance.

VARIABLES	(1) ΔCASH-ETR	(2) ΔCASH-ETR	(3) ΔCASH-ETR	(4) ΔCASH-ETR	(5) ΔCASH-ETR
ΔSHARE-ISSUE	-0.0599***	-0.0679***	-0.0613***	-0.0637***	-0.0566***
	(-5.276)	(-5.653)	(-5.155)	(-5.287)	(-4.743)
ΔDEBT-ISSUE				0.0686***	0.0664***
				(3.951)	(3.816)
ΔZ		-0.0012***		-0.0012***	
		(-5.005)		(-5.085)	
ΔKZ			-0.0001		-0.0000
			(-1.220)		(-0.980)
ΔROA		-0.6291***	-0.6152***	-0.6278***	-0.6133***
		(-19.505)	(-19.352)	(-19.488)	(-19.308)
ΔSALES		0.0136**	0.0129**	0.0138**	0.0130**
		(2.371)	(2.241)	(2.414)	(2.268)
ΔSALES GROWTH		-0.0186***	-0.0184***	-0.0182***	-0.0179***
		(-6.652)	(-6.581)	(-6.495)	(-6.414)
ΔBM		0.0135***	0.0124***	0.0138***	0.0128***
		(4.085)	(3.788)	(4.183)	(3.876)
ΔF-INCOME		-0.7092***	-0.7131***	-0.7193***	-0.7232***
		(-7.609)	(-7.659)	(-7.697)	(-7.746)
ΔLEVERAGE		-0.0262*	-0.0346**	-0.0666***	-0.0737***
		(-1.678)	(-2.236)	(-3.537)	(-3.927)
ΔPPE		-0.0099	-0.0106	-0.0155**	-0.0161**
		(-1.474)	(-1.588)	(-2.238)	(-2.330)
ΔINVENTORY		-0.1027***	-0.1059***	-0.1128***	-0.1157***
		(-4.846)	(-4.996)	(-5.292)	(-5.425)
ΔR&D		0.1112	0.1049	0.1108	0.1040
		(1.442)	(1.359)	(1.437)	(1.345)
ΔDiscAccruals		0.1233***	0.1240***	0.1227***	0.1233***
		(11.393)	(11.435)	(11.341)	(11.381)
ΔNOL		-0.0258***	-0.0257***	-0.0255***	-0.0254***
		(-5.577)	(-5.566)	(-5.509)	(-5.501)
CONSTANT	0.0136***	0.0092***	0.0094***	0.0091***	0.0093***
	(18.480)	(9.149)	(9.277)	(9.032)	(9.177)
OBSERVATIONS	43,289	43,289	43,289	43,289	43,289
R^2	0.0016	0.0412	0.0408	0.0416	0.0412
Adjusted R^2	0.0003	0.0397	0.0392	0.0401	0.0396

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 9: Regressions of CASH ETR on lagged explanatory variables

VARIABLES	(1) CASH-ETR	(2) CASH-ETR	(3) CASH-ETR
SHARE-ISSUE $_{t-1}$	-0.0329***		-0.0323***
	(-3.043)		(-2.985)
DEBT-ISSUE $_{t-1}$	0.0013***	0.0014***	0.0013***
	(6.313)	(6.851)	(6.299)
Z-SCORE $_{t-1}$	0.2808***	0.2848***	0.2806***
	(14.940)	(15.202)	(14.920)
ROA $_{t-1}$	0.0101***	0.0102***	0.0101***
	(10.535)	(10.702)	(10.552)
SALES $_{t-1}$	-0.0096***	-0.0109***	-0.0098***
	(-4.650)	(-5.298)	(-4.766)
SALES GROWTH $_{t-1}$	0.0183***	0.0188***	0.0183***
	(6.712)	(6.902)	(6.717)
BM $_{t-1}$	-0.0479	-0.0495	-0.0492
	(-0.874)	(-0.901)	(-0.897)
F-INCOME $_{t-1}$	-0.0711***	-0.0737***	-0.0742***
	(-7.396)	(-7.033)	(-7.092)
LEVERAGE $_{t-1}$	-0.0210***	-0.0215***	-0.0213***
	(-5.750)	(-5.845)	(-5.783)
PPE $_{t-1}$	0.0914***	0.0891***	0.0906***
	(8.279)	(8.030)	(8.144)
INVENTORY $_{t-1}$	-0.2784***	-0.2815***	-0.2797***
	(-9.510)	(-9.574)	(-9.529)
R&D $_{t-1}$	-0.0259***	-0.0290***	-0.0262***
	(-2.595)	(-2.911)	(-2.624)
DiscAccruals $_{t-1}$	-0.0674***	-0.0673***	-0.0672***
	(-20.939)	(-20.843)	(-20.839)
NOL $_{t-1}$	-0.0219***	-0.0221***	-0.0219***
	(-5.462)	(-5.500)	(-5.468)
ΔNOL $_{t-1}$		0.0210	0.0189
		(1.240)	(1.112)
CONSTANT	0.2143***	0.2132***	0.2144***
	(21.984)	(21.854)	(21.983)
INDUSTRY FE	YES	YES	YES
YEAR FE	YES	YES	YES
OBSERVATIONS	43,289	43,289	43,289
R^2	0.117	0.117	0.117
Adjusted R^2	0.115	0.115	0.115

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 10: Regressions of future and long-term CASH ETR on share and debt issuance

VARIABLES	(1) CASH-ETR$_{t+1}$	(2) CASH-ETR$_{t+2}$	(3) 3YR-CASH-ETR
SHARE-ISSUE	-0.1306***	-0.1648***	-0.1115**
	(-5.339)	(-6.218)	(-2.257)
DEBT-ISSUE	-0.0117	-0.0227	0.0358
	(-0.577)	(-1.030)	(1.499)
Z-SCORE	0.0014***	0.0002	0.0011***
	(5.930)	(0.580)	(3.391)
ROA	0.2853***	0.1374***	0.2037***
	(12.468)	(5.727)	(5.979)
SALES	0.0076***	0.0058***	0.0065***
	(6.853)	(4.816)	(4.374)
SALES GROWTH	-0.0081**	-0.0113**	-0.0314***
	(-1.972)	(-2.448)	(-5.693)
BM	0.0217***	0.0088**	0.0094
	(5.368)	(2.164)	(1.631)
F-INCOME	-0.1061*	-0.0638	-0.1260
	(-1.757)	(-0.966)	(-1.490)
LEVERAGE	-0.0807***	-0.0826***	-0.1070***
	(-6.468)	(-6.131)	(-5.673)
PPE	-0.0211***	-0.0183***	-0.0302***
	(-4.655)	(-3.758)	(-3.927)
INVENTORY	0.0960***	0.0750***	0.0412**
	(7.182)	(5.340)	(2.300)
R&D	-0.2939***	-0.2767***	-0.3308***
	(-8.067)	(-5.453)	(-5.372)
DiscAccruals	-0.0122	-0.0176	0.0452**
	(-0.926)	(-1.235)	(2.126)
NOL	-0.0503***	-0.0413***	-0.0485***
	(-13.964)	(-10.685)	(-9.648)
ΔNOL	0.0121***	0.0210***	0.0342***
	(2.582)	(4.243)	(5.988)
CONSTANT	0.2894***	0.3425***	0.3380***
	(25.310)	(26.382)	(18.820)
INDUSTRY FE	YES	YES	YES
YEAR FE	YES	YES	YES
OBSERVATIONS	31,275	26,264	23,228
R^2	0.110	0.087	0.091
Adjusted R^2	0.110	0.084	0.087

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 11: Regression of CASH-ETR on gross share and debt issuance

VARIABLES	(1) CASH-ETR	(2) CASH-ETR	(3) CASH-ETR
GSHARE-ISSUE	-0.0921***		-0.0928***
	(-5.440)		(-5.485)
GDEBT-ISSUE		0.0141**	0.0145**
		(2.429)	(2.501)
Z-SCORE	-0.0002	-0.0000	-0.0002
	(-0.927)	(-0.119)	(-0.929)
ROA	-0.1147***	-0.1077***	-0.1143***
	(-6.316)	(-5.975)	(-6.294)
SALES	0.0059***	0.0060***	0.0059***
	(8.052)	(8.191)	(8.086)
SALES GROWTH	-0.0431***	-0.0461***	-0.0435***
	(-11.123)	(-11.768)	(-11.155)
BM	0.0096***	0.0103***	0.0095***
	(3.922)	(4.201)	(3.883)
F-INCOME	-0.1535***	-0.1569***	-0.1540***
	(-3.822)	(-3.897)	(-3.829)
LEVERAGE	-0.0615***	-0.0666***	-0.0687***
	(-7.799)	(-7.883)	(-8.101)
PPE	-0.0206***	-0.0211***	-0.0209***
	(-6.538)	(-6.694)	(-6.647)
INVENTORY	0.0437***	0.0404***	0.0414***
	(4.910)	(4.512)	(4.623)
R&D	-0.1576***	-0.1592***	-0.1556***
	(-6.512)	(-6.571)	(-6.425)
DiscAccruals	0.0658***	0.0623***	0.0661***
	(6.551)	(6.212)	(6.581)
NOL	-0.0556***	-0.0559***	-0.0556***
	(-20.738)	(-20.814)	(-20.738)
ΔNOL	0.0317***	0.0317***	0.0317***
	(8.033)	(8.029)	(8.028)
$CASH\text{-}ETR_{t-1}$	0.2853***	0.2863***	0.2852***
	(36.308)	(36.461)	(36.287)
CONSTANT	0.2081***	0.2065***	0.2081***
	(23.505)	(23.298)	(23.484)
INDUSTRY FE	YES	YES	YES
YEAR FE	YES	YES	YES
OBSERVATIONS	43,289	43,289	43,289
R^2	0.185	0.184	0.185
Adjusted R^2	0.183	0.182	0.183

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.

Table 12: The effects of share and debt issuance on UTB and tax Settlement

VARIABLES	(1) UTB	(2) TAX SETTLEMENT
SHARE-ISSUE	-0.2773	-0.5009**
	(-0.641)	(-2.141)
DEBT-ISSUE	-0.1356	-0.2406*
	(-0.661)	(-1.743)
KZ-SCORE	-0.0019***	-0.0013***
	(-4.266)	(-5.111)
ROA	-0.4521	-0.4541**
	(-1.536)	(-2.392)
SALES	0.8463***	0.3640***
	(46.454)	(22.377)
SALES GROWTH	-0.3784***	-0.2489***
	(-3.437)	(-3.516)
BM	-0.0077	0.0110
	(-0.226)	(0.478)
F-INCOME	6.7668***	1.4824***
	(9.554)	(2.831)
LEVERAGE	0.0984	-0.3574***
	(0.646)	(-3.525)
PPE	-0.3242***	-0.1081**
	(-4.635)	(-2.292)
INVENTORY	-0.8360***	-0.3207**
	(-3.585)	(-2.169)
R&D	4.5313***	1.3438***
	(10.472)	(4.106)
DiscAccruals	0.2891*	0.4030***
	(1.668)	(3.647)
NOL	-0.0583	-0.1084***
	(-0.935)	(-2.800)
ΔNOL	-0.0369	0.0719
	(-0.636)	(1.526)
CONSTANT	-3.8943***	-1.8818***
	(-26.189)	(-16.002)
INDUSTRY FE	YES	YES
YEAR FE	YES	YES
OBSERVATIONS	9,522	9,313
R^2	0.697	0.355
Adjusted R^2		

Note: All variables are defined in Table A. T-statistics based on robust standard errors clustered by firms are in parenthesis; ***, **, * represent statistical significance at a 1%, 5% and 10% level, respectively.