The Role of Insiders on Book-Tax Conformity and Leverage in the New Tax Rate

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Abstract

This study investigates the link between book-tax conformity and leverage under the moderation of insiders. This study finds that the leverage has a significantly positive connection with book-tax conformity in the three-year pooled sample, in the year before and the year immediately after the new tax rate, thereby, lending support to the hypothesis. The hypotheses on the presence and the cumulative insider ownership over the conformity-leverage relationship are supported in the three-year pooled sample and the year before the new tax rate. These findings indicate that the new tax rate might cause a change in the observed relationship rendering leverage (presence, and the cumulative insider ownership) insignificant in the year of (the year immediately after) the new tax rate. The results of this study are robust to alternative monitoring mechanisms.

Keywords: Leverage; Insiders; Book-tax conformity

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1. Introduction

The primary issue of book-tax difference (BTD) is whether the cause involved fraudulent practices. Book-tax conformity is proposed to address the gap to lower costs, improve tax revenues and accounting information, and alleviate aggressive reporting and tax sheltering. However, results of studies on conformity are associated with a loss of book informativeness, lower value relevance, tax avoidance, and aggressive tax sheltering. Yet, few studies on how conformity relates to other corporate decisions were conducted. Conformity is positively linked to leverage.

Large firms as well as profitable and investment-grade firms increase leverage as tax rises. However, with higher leverage comes firmer lender monitoring, a higher probability of default, risks of lost financial flexibility, cost of bankruptcy, and increased conflict between shareholders and debt holders. The decision for leverage is modified relative to the level of equity.

Executive compensation and managerial ownership are internal governance mechanisms employed by Taiwan firms that may comprise insider ownership. Insiders enjoy access to comprehensive company information useful for decision-making. Thereby, insiders influence the firm performance, may induce decisions inconsistent with the interest of shareholders, influence over the cost of debt is associated even by the personal transactions by insiders, exercise influence over outsiders, and counter the monitoring efforts of outside block holders. The paramount influence of insiders on the decision for leverage and its levels may significantly affect the relationship between leverage and conformity. Due to the potential impact of insiders, firms in Asia are required reporting disclosure on officers and directors regardless of ownership. Consistent with exacerbating view, the insider ownership produces pressure to manage earnings. However, an alleviating view posits that significant ownership of insiders reduces the incentive over aggressive financial reporting or tax planning.

However, no existing studies on how leverage affects conformity in Taiwan-listed firms with insiders as a moderating variable. This study fills in this gap using an emerging market of Taiwan, with underlying forces of market players, weak corporate governance, and its financial and tax reporting environment. The connection between the United States (U.S.) investments in Taiwan and the latter as a supplier to the U.S. validates the relevance of this study on conformity. The increased corporate income tax rate (CIT) in 2018 is considered in the study on leverage, to test the hypothesis that as firms engage in more leverage, a positive association between conformity and leverage is expected, moreover, the association between conformity and leverage differs with the presence and with the cumulative percentage of ownership by insiders.

The sample consists of firms that are generally large in size, whose leverage and returns on assets are at an average level, with moderate investments in tangible property. They enjoy slightly high growth opportunities. Their insiders keep a cumulative shareholding at 4%. This study finds that the leverage has a significantly positive link with book-tax conformity in the three-year pooled sample, in the year before and the year immediately after the implementation of the new tax rate, thereby, lending support to the hypothesis. The hypotheses on the presence and the cumulative ownership of insiders over the book-tax conformity (BTC)–leverage (LEV) relationship are supported in the three-year pooled sample, in the year before the new tax rate. These findings indicate that the new tax rate might cause a change in the observed relationship rendering leverage, presence, and the cumulative insider ownership insignificant in the year of the implementation of the new tax rate. Our results of this study are robust to alternative monitoring mechanisms.

The results of this study add to the discussion on the role of insiders and on book-tax conformity by documenting evidence that financial leverage is a vital factor in conformity. This benefits local and foreign investors, tax and market regulators, and the academe and researchers.

This paper is prepared as follows. Section 2 offers a literature review on book-tax conformity, leverage, and the insiders. Section 3 discusses the research methodology. Section 4 analyzes the results and section 5 concludes.

2. Prior Literature and Hypotheses Development

2.1. Institutional background

The BTD occurs either from one or any combination of managing earnings upward, aggressive tax planning downward, due to the divergent objectives and rules between financial reporting standards and tax laws (Chan et al., 2010). Chan et al. (2010) explain that a temporary difference is not a serious issue because it arises from dissimilar recognition rules between accounting and tax laws that reverse itself over time, however, the permanent difference is never eliminated. The primary issue concerning the BTD is whether the cause involved fraudulent practices (Hanlon and Shevlin, 2005). An increasing BTD is speculated to be caused by managing earnings (Hanlon and Shevlin, 2005), reducing tax burden using tax shelter (Wilson, 2009); or manipulating either book or tax income, or both incomes (Chen and Gavious 2017). Thereby, book-tax conformity is proposed (Hanlon and Shevlin, 2005). Conformity is an association between tax regulations and the accounting rules in a country (Chan et al., 2010). Changes have been introduced under the U.S. Tax Reform Act of 1986 (TRA) 86 towards conformity (Blaylock et al., 2017; Chan et al., 2010).

Conformity intents to lower record-keeping costs, minimize tax costs, lessen motivation in aggressive tax planning (Chan et al., 2010; Blaylock et al., 2017); increase tax revenues

(Blaylock et al., 2017); improve accounting information and earnings (Atwood et al., 2010), decrease aggressive financial reporting, curtail abusive tax sheltering (Desai, 2005; Whitaker, 2006); and synergize resources of capital market participants and tax authorities (Desai, 2005). However, results of studies on conformity show a loss of informativeness in book income (Hanlon and Shevlin, 2005; Ali and Huang, 2000; Hanlon et al., 2005; Hanlon et al., 2006; Hanlon et al., 2008), lower value relevance (Ali and Hwang, 2000); related to tax avoidance (Mills, 1998; Braga, 2017); firms aggressive tax sheltering display more book-tax differences and additional aggressive financial reporting practices (Wilson, 2009). But low conformity is related to increased tax noncompliance (Desai, 2005; Chan et al., 2010; Atwood et al., 2012; Tang, 2015).

Yet, Hanlon and Heitzman (2010) and Blaylock et al. (2017) observe few studies on how conformity is related to other corporate decisions. In their study of the effects of conformity on capital structure, Blaylock et al. (2017) find that conformity is positively linked to leverage.

Firms increase leverage as tax rates rise because their corresponding interest expense is allowed for deduction against taxable income, thereby, serving as a higher tax shield (Longstaff, 2014; Loney, 2015; Heider and Ljungqvist, 2015; Li et al., 2016) but do not respond to tax cuts (Heider and Ljungqvist, 2015). Profitable and investment-grade firms respond to tax change (Heider and Ljungqvist, 2015) but large firms respond in a short time (Longstaff, 2014). However, highly-leveraged firms face a higher probability of default (Molina, 2005); invite firmer lender monitoring, and maybe more likely to use upward earnings measures to sidestep disrespecting debt agreements (Watts and Zimmerman, 1986). On the contrary, the decision for less leverage is a restraint against the potential cost of bankruptcy (Loney, 2015), increased conflict between shareholders and debtholders (Seifert et al. 2005), the risk of lost financial flexibility (Molina, 2005) which has been computed to be equivalent to the tax benefit (Li et al., 2016). The level of leverage is modified relative to equity, both being sections of capital structure.

Investors build up shares to become block holders beneficially owning a minimum of 5% of the firm's outstanding common shares with voting rights (OECD, 2016); together with inspiration, and enticement to pursue benefits of control, they can impact the firm value (Wang, 2015). Individual investors in Taiwan firms are dominant in terms of percentage of ownership (66%) and frequency of market transactions (Huang and Shiu, 2009); who likely take the role of controlling owner (77%) which tends to be a family (Yeh, Shu, and Su, 2012). Officers and directors with substantial shares comprise the managerial ownership. Moreover, Taiwan employs executive compensation through profit sharing and employee stock ownership plans to retain valuable personnel (Sheu and Yang, 2005). Managerial ownership, executive compensation, and an independent board form the internal governance mechanisms

(Sheu and Yang, 2005). The stewardship theory professes that insiders as stewards of the firm have access to company information, useful for their decisions on the operational, financial, and investment activities (Ngui et al. 2008), encompassing borrowing and tax issues.

Executives exercise influence with a U-shaped relationship with the firm performance (Sheu and Yang, 2005); the financial and non-financial benefits or costs at high insider ownership may induce decisions inconsistent with growth-oriented risk-taking supporting the entrenchment theory (Wright et al., 1996). Low insider ownership is negatively(positively) related to performance in US and UK (Germany and Japan), and the leverage tends to have a consistently negative effect on performance (Seifert et al. 2005). Even the personal transactions by insiders in pledging their firm shareholdings are associated with a decrease in the cost of debt indicating reduced risks (Puleo et al., 2021). Relative to outsiders on board, the insiders exercise a robust positive result on firm performance (Ngui et al., 2008). The insiders counter the monitoring efforts of outside bloc kholders suggesting that outside blockholders may be effective in firms without significant managerial ownership (Shleifer and Vishny, 1986; Zhong et al., 2007). Influence and access rise the risk of insiders consuming prerequisites at the expense of shareholders and personal benefits of controls (Ngui et al., 2008) supporting the entrenchment theory. Due to the potential impact insiders can do, firms in Asia are required reporting disclosure on officers and directors regardless of ownership (OECD, 2016).

The paramount influence of insiders on the decision for leverage and tax issues may significantly affect the relationship between leverage and conformity. We are not aware of existing studies in the English language on how leverage affects conformity in Taiwan-listed firms with insiders as a moderating variable. Thus, this study responds to this gap identifying an emerging market of Taiwan as a research setting, maintaining institutional factors across sectors for exchange-listed stocks, with underlying forces of market players in the Taiwan Stock Exchange Corporation (TSEC) stock market, weak corporate governance, and its financial and tax reporting environment. The connection between U.S. investments in Taiwan firms and Taiwan as a supplier of U.S. firms demonstrates the relevance of this study on book-tax conformity, a continuing matter of discussion related to the TRA 86.

The study covers the implementation of the increased CIT in 2018. Firms enjoying growth opportunities may seek capital infusion. An incentive for tax benefit becomes greater because an increase in tax rates offers firms a higher tax shield on deductible expenditures, thus, raising funds from creditors offers a tax shield for its interest expense. More leverage results in lesser book and taxable income, hence, higher book-tax conformity. This study hypothesizes that as firms engage for more leverage, a positive association between

conformity and leverage is expected, moreover, the association between conformity and leverage differs with the presence and with the cumulative percentage of insider ownership.

The results of this study enrich the literature on the role of insiders, and on book-tax conformity by the evidence that financial leverage is a vital factor of conformity and insights into the role of outside block holding as alternative monitoring mechanisms. This benefits local and foreign investors, tax and market regulators, and the academe and researchers.

2.2. Hypotheses

Firms may seek capital infusion from investors or debtors. Funding needs for investing and financing purposes may be treated differently because its interest expenses are eligible for capitalized with the principal amount.

However, firms facing growth opportunities requiring working capital or operating needs sourced from borrowing are allowed to claim their interest expense as operating expense. An increased CIT rate offers firms higher marginal tax shields on holding debt (Li et al., 2016) for its interest expense and other deductible expenditures. The more allowable deductions the higher tax shields, resulting in lower book income, lower taxable income, and lower income tax, thus, high book-tax conformity. Evidence shows that firms increase leverage in response to the rise in tax rates (Longstaff, 2014; Loney, 2015; Heider and Ljungqvist, 2015; Li et al., 2016). This study hypothesizes that in firms with more leverage, a positive affiliation between conformity and leverage is expected. The hypothesis is as follows:

Hypothesis 1. *Firms with more leverage are more likely to exhibit book-tax conformity.*

The stewardship theory promotes that insiders as stewards of the firm gain access to comprehensive information that enable them to formulate decisions beneficial to the firm (Ngui et al., 2008) including the decision for leverage and tax issues. Pieces of evidence of the influences of insiders are documented. Executives show a U-shaped relationship with firm performance (Sheu and Yang, 2005). The insiders exercise robust positive results on firm performance (Ngui et al., 2008) and counter the monitoring efforts of outside blockholders suggesting that outside blockholders may be ineffective in firms with significant managerial ownership (Shleifer and Vishny, 1986; Zhong et al., 2007). Even the personal transactions by insiders in pledging their firm shareholdings are associated with a decrease in the cost of debt indicating reduced risks (Puleo et al., 2021). The paramount influence of insiders on the decision for leverage and its levels may significantly affect the relationship between leverage and conformity. The second hypothesis is stated as follows:

Hypothesis 2. *The relationship between book-tax conformity and leverage differs with the presence of insiders.*

Influence and access rise the risk of insiders consuming prerequisites at the expense of shareholders and personal benefits of controls (Ngui et al., 2008) supporting the entrenchment theory. Further, the level of insider ownership may drive its influence. The financial and non-financial benefits or costs at high insider ownership may induce decisions inconsistent with growth-oriented risk taking supporting the entrenchment theory of insiders (Wright et al., 1996). On the other hand, the low insider ownership is negatively(positively) related to performance in US and UK (Germany and Japan) while the results of the tests on the effect of high insider ownership on performance are mixed (Seifert et al. 2005). Consistent with exacerbating view, the cumulative percentage of insider ownership produces pressure to manage earnings. However, an alleviating view posits that significant ownership of insiders reduces the incentive over aggressive financial reporting or tax planning. The third hypothesis is stated as follows:

Hypothesis 3. *The relationship between book-tax conformity and leverage differs with the cumulative percentage of ownership of insiders.*

3. Research Method

3.1. The measure of book-tax conformity

This study uses the Atwood et al.'s (2010) approach to measure book-tax conformity:

$$CTE = \beta_0 + \beta_1 PTBI + \beta_2 DIV + e \quad (1)$$

where CTE is the current tax expense; PTBI is the pre-tax measure of book income; DIV is the total dividends for the period, and e is an error term. The variables CTE, PTBI, and DIV are divided by average total assets. The n-1 method is applied to the root-mean-squared error (RMSE) of the standard error of Eq. (1) to translate lower(higher) RMSE to a higher(lower) BTC. The model is utilized for changes in tax rates and conformity within a country, across countries, over time, and is useful for this study of one country covering sectors under the Taiwan Stock Exchange (TSE) market. The original model includes ForPTBI as the estimated foreign portion of the pre-tax measure of book income which Atwood et al. (2010) recognize as a limitation of the model. Although the PTBI is not segregated into local and foreign portions, we deemed the variable PTBI adequately covers these portions.

3.2. Tests for the effect of book-tax conformity on leverage

To test hypothesis 1, this study uses Eq. (2) model to estimate the effect of leverage on book-tax conformity:

$$BTC = \alpha + \beta_1 LEV + \sum \beta_2 Controls + \varepsilon \quad (2)$$

where: BTC is derived from a scaled descending rank of the root-mean-squared error from Eq. (1), and LEV is total debt divided by total assets. Drawing from Blaylock et al.

(2017), this study uses size (SIZE), return on assets (ROA), the book-to-market value of equity (BM), and net property, plant, and equipment (PPE) as control variables for extraneous effect. The IND and YEAR are variables used to control the industry- and year-fixed effects.

The firm size is a proxy for the surety value of assets in securing the debt. The return on assets serves as a proxy for performance affecting the decision to borrow. The book-to-market value of equity serves as a proxy for growth opportunities affecting the decision for capital. The net property, plant, and equipment is a proxy for a non-debt tax shield through depreciation.

The coefficient of interest is β_1. A positive β_1 indicates higher leverage is associated with higher conformity.

3.3. Tests for the impact of insiders on the relationship between book-tax conformity and leverage

To test hypothesis 2, this study uses Eq. (3) model to estimate the effects of the existence of a manager beneficially owning a minimum of 5% of the firm's outstanding common stocks on the relationship between conformity and leverage:

$$BTC = \alpha + \beta_1 LEV + \beta_2\ INS + \beta_3\ LEV\ x\ INS + \sum\ \beta_4 Controls + \varepsilon \quad (3)$$

where: BTC, LEV, and control variables have been discussed earlier. The INS denotes the dummy variable with a value equal to one if a firm has at least one manager beneficially owning a minimum of 5% ownership or zero otherwise; and LEV x INS denotes an interaction term that indicates the extent to which the presence of managers affects leverage.

The coefficient of interest is β_3, the interaction term which indicates the extent to which the existence of at least one manager beneficially owning at least 5% of the firm's outstanding common stocks affects leverage. A positive β_3 indicates an interaction of the existence of at least one manager beneficially with at least 5% ownership with leverage supports higher book-tax conformity.

To test hypothesis 3, this study uses Eq. (4) model to estimate the effects of the cumulative percentage of stocks owned by all managers on the relationship between book-tax conformity and leverage:

$$BTC = \alpha + \beta_1 LEV + \beta_2\ \%INS + \beta_3\ LEV\ x\ \%INS + \sum\ \beta_4 Controls + \varepsilon \quad (4)$$

where: BTC, LEV, and control variables have been discussed earlier. The %INS denotes the cumulative percentage of stocks owned by all managers; and LEV x %INS denotes an interaction term that indicates the extent to which cumulative percentage ownership of managers affects leverage.

The coefficient of interest is β_3, the interaction term which indicates the extent to which cumulative percentage ownership of managers affects leverage. A positive β_3 indicates an interaction of the cumulative percentage of ownership of all managers with leverage supports higher book-tax conformity.

The coefficients are estimated by ordinary least squares using EViews. All regression results use standard errors clustered by the firm to account for autocorrelation and heteroscedasticity. Table 1 describes these variables.

Table 1. Definition of variables used

Variables	Definition
BTC	Refers to book-tax conformity derived from the scaled descending rank of the root-mean-squared error from Equation 1
CTE	Refers to total current tax expense in New Taiwan Dollar currency (NTD)
PTBI	Refers to pre-tax measure of book income for the period in NTD
DIV	Refers to total dividends for the period in NTD
LEV	Refers to total debts divided by total assets in NTD
SIZE	Denotes the natural logarithm of the firm's total assets
ROA	Is the return on assets for continuing operations
BM	Denotes book value of equity in NTD divided by the market value of equity in NTD
PPE	Denotes net property, plant, and equipment in NTD divided by the market value of assets in NTD
INS	Denotes the dummy variable with a value equal to one if a firm has at least one manager beneficially owning 5% or more of the firm's outstanding common stocks, zero otherwise
LEV x INS	Denotes an interaction term that indicates the extent to which the existence of a manager who beneficially owns 5% or more of the firm's outstanding common stocks affects leverage
%INS	Denotes the cumulative percentage of stocks owned by all managers
LEV x %INS	Denotes an interaction term that indicates the extent to which cumulative percentage ownership of all managers affects leverage
IND	Is a variable used to control the industry-fixed effect.
YEAR	Is a variable used to control the year-fixed effect.
BLOCK	Denotes a dummy variable defined as one if a firm has at least one outside blockholding beneficially owning at least 5% of the firm's outstanding common stocks and 0 otherwise
LEV x BLOCK	Denotes an interaction term that indicates the extent to which the

	existence of outside blockholders affects leverage
%BLOCK	Denotes the cumulative percentage of stocks owned by all outside blockholders
LEV x %BLOCK	Denotes an interaction term that indicates the extent to which cumulative percentage ownership of outside blockholders affects leverage

4. Results and Discussion

4.1. Sample selection

Taiwan firms supply brand products owned by U.S. firms, in turn, U.S. investors account for the largest portion of Qualified Foreign Institutional Investors (Lin and Shiu, 2003). The link is relevant for this study on conformity for TSEC as an emerging market with foreign investors, and secondly, because conformity is an ongoing issue connected with TRA 86.

The market participants, weak corporate governance in Taiwan firms, and the financial and tax reporting in the country comprise the underlying forces in the TSEC stock market making Taiwan a conducive research environment of a single country, preserving the institutional factors such as economic direction, legal origin, law enforcement, accounting disclosure and recognition policies, and local generally accepted accounting principles for tax reporting. Taiwan upgraded its CIT to a maximum rate of 20% effective January 1, 2018 (PwC, 2021). The change in tax rate motivates this study on the link between book-tax conformity and leverage investigating the potential moderating role of insiders for the study covering three years with 2018 as central to the study, with pre and post period of one year each. The increased tax rate offers firms higher marginal tax shields on holding debt (Li et al., 2016). The more deductible expenditures the higher the tax shields, and the lower the income tax. Evidence shows that firms increase leverage in response to the rise in tax rates (Longstaff, 2014; Loney, 2015; Heider and Ljungqvist, 2015; Li et al., 2016).

We collect our data from the Taiwan Economic Journal database, a data vendor in Taiwan. This study uses the selection criteria to restrict the firm sample. We: 1. exclude financial companies, 2. exclude firms whose financial reports are unconsolidated financial reports, 3. exclude new firms listed for less than six months, 4. firm-observations with negative pre-tax book income or with negative current tax expense, and 5. The pre-tax book income and current tax expense are adjusted with the winsorized method for extreme values at the top and bottom one percent of the distribution following Atwood et al. (2010). The samples for 2017, 2018, and 2019 represent 71% (630), 69% (634), and 68% (638) of the TSE market, respectively. There are 1,902 firm observations for the three years under study.

4.2. Descriptive statistics

Table 2 displays the sectors and industries under study with their corresponding BTC sorted by the level of conformity. Sector 9(20) has the highest(lowest) BTC.

Table 2. Book-tax conformity measures

Sector	TSE Industry	BTC	Sector	TSE Industry	BTC
9	M1900 Pulp/Paper	1.00	1	M1100 Cement	0.48
30	M2330 Information Service	0.96	10	M2000 Iron & Steel	0.44
11	M2100 Rubber	0.92	16	M2700 Tourism	0.40
23	M9700 Gas & Electricity	0.88	21	M1721 Chemical	0.36
6	M1600 Elec. Appliance & Cab	0.84	12	M2200 Automobile	0.32
29	M2329 Elec. Products Dist.	0.80	18	M2900 Trading & Cons.	0.28
2	M1200 Foods	0.76	5	M1500 Electric & Machinery	0.24
15	M2600 Shipping & Trans.	0.72	24	M2324 Semiconductor	0.20
26	M2326 Optoelectronic	0.68	4	M1400 Textiles	0.16
31	M2331 Other Electronic	0.64	25	M2325 Computer & Peripheral	0.12
3	M1300 Plastics	0.60	22	M1722 Biotech. & Medical	0.08
14	M2500 Building Material	0.56	28	M2328 Elec. Parts & Comp.	0.04
27	M2327 Comm. & Internet	0.52	20	M9900 Others	0.00

Panel A of Table 3 shows the mean of variables for the 2018 sample. The firms are large in size, enjoy growth opportunities, have moderately investment in tangible property, with moderate leverage, generate an average return on assets, with insiders whose cumulative ownership is at 4%. Panel B shows the additional computation of the mean of selected variables for the pre-and post- periods. The BTC, %INS decrease and then increase following an irregular pattern. However, the INS increases, then decreases. The pattern of increases in LEV in 2018 and 2019 seems to follow the findings of Heider and Ljungqvist (2015).

Table 3. Descriptive statistics

Panel A	Mean	Standard deviation	Median	Maximum
BTC	0.36	0.28	0.28	1.00
LEV	43.05	17.12	43.97	91.92
SIZE	16.26	1.29	16.07	20.40

BM	0.65	0.39	0.59	6.14
PPE	8,461,521.00	26,632,035.00	2,070,223.00	399,000,000.00
ROA	0.04	0.03	0.04	0.34
INS	0.04	0.21	0.00	1.00
%INS	1.08	2.20	0.32	28.00

	2017	2019
Panel B	**Mean**	
BTC	0.40	0.41
LEV	42.73	44.07
INS	0.03	0.02
%INS	1.17	1.10

BTC refers to book-tax conformity derived from the scaled descending rank of the root-mean-squared error from Equation 1; LEV refers to total debts divided by total assets in NTD; SIZE denotes the natural logarithm of the firm's total assets; BM denotes the book value of equity in NTD divided by the market value of equity in NTD; PPE denotes net property, plant, and equipment in NTD divided by the market value of assets in NTD; ROA is the return on assets for continuing operations; INS denotes the dummy variable with a value equal to one if a firm has at least one manager beneficially owning 5% or more of the firm's outstanding common stocks, zero otherwise; and %INS denotes the cumulative percentage of stocks owned by all managers.

Table 4 reports the Pearson Product Moment correlation. No correlation coefficients among the variables are extremely high, thus, multicollinearity is not an issue in this study.

Table 4. Pearson Product Moment Correlation

Variable	**BTC**	**LEV**	**SIZE**	**BM**	**PPE**	**ROA**	**INS**
BTC	1.00						
LEV	0.08	1.00					
SIZE	0.07	0.47	1.00				
BM	0.17	0.10	0.08	1.00			
PPE	0.06	0.16	0.54	0.07	1.00		
ROA	(0.17)	(0.30)	(0.14)	(0.17)	(0.09)	1.00	
INS	(0.06)	(0.09)	(0.11)	(0.04)	(0.05)	0.01	1.00
%INS	(0.13)	(0.09)	(0.15)	(0.10)	(0.09)	0.03	0.77

BTC refers to book-tax conformity derived from the scaled descending rank of the root-mean-squared error from Equation 1; LEV refers to total debts divided by total assets in NTD; SIZE denotes the natural logarithm of the firm's total assets; BM denotes the book value of equity in NTD divided by the market value of equity in NTD; PPE denotes net property, plant, and equipment in NTD divided by the market value of assets in NTD; ROA is the return on assets for continuing operations; INS denotes the dummy variable with a value equal to one if a firm has at least one manager beneficially owning 5% or more of the firm's outstanding common stocks, zero otherwise; and %INS denotes the cumulative percentage of stocks owned by all managers.

4.3. Results and discussions from tests of the effect of conformity on leverage with the moderating role of insiders

Table 5 displays the results of the tests on the 2018 sample of the effects of leverage on conformity, and the moderation of insiders.

Model 1 shows that the LEV is negatively related to conformity, albeit it is insignificant, thus, does not support hypothesis 1. Model 2 exhibits that the LEV is negatively associated with BTC but insignificant; the INS is a significantly negative moderator and interacts with leverage towards higher conformity. Model 3 shows that LEV has an insignificant link with conformity; the %INS is a significantly negative moderator and interacts with leverage towards higher conformity.

The ROA is consistently negative and significant, consistent with the findings of Blaylock et al. (2017) of a moderately significant negative relation with leverage. The results on the control variables are inconsistent with the findings of Blaylock et al. (2017). The BM is consistently positive and significant indicating the growth opportunity has a reasonable influence on firms to engage in more leverage. But Blaylock et al. (2017) find positive BM but has an insignificant effect on leverage.

Table 5. Book-tax conformity, leverage, and insiders (2018 sample)

	Model 1		**Model 2**		**Model 3**	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.17	0.98	0.19	1.09	0.26	1.50*
LEV	(0.00)	(0.11)	(0.00)	(0.51)	(0.00)	(0.95)
SIZE	0.01	0.90	0.01	0.88	0.01	0.65
BM	0.11	3.79***	0.11	3.73***	0.10	3.60***
PPE	0.00	0.49	0.00	0.51	0.00	0.57
ROA	(1.20)	(3.46)***	(1.19)	(3.44)***	(1.22)	(3.53)***
INS			(0.23)	(2.00) **		
LEV x INS			0.00	1.67*		
%INS					(0.03)	(2.81) **
LEV x %INS					0.00	1.92*
IND	Yes		Yes		Yes	
Adjusted R^2	0.08		0.08		0.09	
N	634		634		634	

*, **, *** indicates significant at the p<0.10, 0.05, 0.01 level.

LEV refers to total debts divided by total assets in NTD; SIZE denotes the natural logarithm of firm's total assets; BM denotes book value of equity in NTD divided by the market value of equity in NTD; PPE denotes net property, plant, and equipment in NTD divided by the market value of assets in NTD; ROA is the return on assets for continuing operations; INS denotes the dummy variable with a value equal to one if a firm has at least one manager

beneficially owning 5% or more of the firm's outstanding common stocks, zero otherwise; LEV x INS denotes an interaction term that indicates the extent to which the existence of a manager who beneficially owns 5% or more of the firm's outstanding common stocks affects leverage; %INS denotes the cumulative percentage of stocks owned by all managers; LEV x %INS denotes an interaction term that indicates the extent to which

cumulative percentage ownership of all managers affects leverage; and IND is a variable used to control the industry-fixed effect.

Panel B of Table 3 reflects that BTC moves in an irregular pattern while the LEV increases in 2018 and 2019. To determine the effects of leverage on conformity in multiple periods, Table 6 displays the results of the tests using Eq. (2). The coefficients of LEV are consistently positive and significant in the three-year pooled sample, in the pre-and post-years, contrary to the results in the 2018 sample previously presented in Table 5. This finding supports the hypothesis that leverage has an influential effect on BTC in the three-year pooled sample, in the year before and the year immediately following the implementation of the new tax rate. This result is similar to the findings of Blaylock et al. (2017) that firms tend to engage in more debt as conformity increases. This result indicates that the new tax rate might cause a change in the observed BTC-LEV relationship rendering LEV insignificant in the year of the implementation.

While the BM is significantly positive, the ROA is negative but inconsistent insignificance.

Table 6. The book-tax conformity and leverage in multiple periods

	Three-year pooled sample		**2017**		**2019**	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.13	1.37	0.10	0.61	0.13	0.82
LEV	0.00	3.48***	0.00	3.33***	0.00	2.72***
SIZE	0.01	1.55	0.01	0.88	0.01	0.90
BM	0.08	4.70***	0.08	2.69***	0.06	1.64**
PPE	0.00	0.48	0.00	0.38	0.00	0.03
ROA	(0.62)	(3.55)***	(0.36)	(0.80)	(0.30)	(1.31) *
IND	Yes		Yes		Yes	
YEAR	Yes					
Adjusted R^2	0.06		0.08		0.04	
N	1,902		630		638	

*, **, *** indicates significant at the p<0.10, 0.05, 0.01 level.

LEV refers to total debts divided by total assets in NTD; SIZE denotes the natural logarithm of firm's total assets; BM denotes book value of equity in NTD divided by the market value of equity in NTD; PPE denotes net property, plant, and equipment in NTD divided by the market value of assets in NTD; ROA is the return on assets for continuing operations; IND is a variable used to control the industry-fixed effect; and YEAR is a variable used to control the year-fixed effect.

Panel B of Table 3 shows that the INS increases in 2018, then decrease in 2019. To determine the impact of the existence of insiders on the relationship between conformity and leverage in multiple periods, Table 7 displays the results of the tests using Eq. (3). The coefficients of LEV are significantly positive in the three-year pooled sample, in the pre-and post-years, moreover, the INS negatively moderates the BTC-LEV relationship and positively interacts with LEV in the three-year pooled sample (moderately) and 2017 (slightly), thus, lending supporting hypothesis 2. However, the results in 2019 show that while the LEV has a

significantly positive relationship with BTC, the INS plays no role in the BTC-LEV relationship nor interact with leverage significantly.

While the BM is consistently significant and positive, the coefficients of ROA are negative but inconsistent in significance.

Table 7. The book-tax conformity, leverage, and insiders in multiple periods

	Three-year pooled sample		**2017**		**2019**	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.14	1.46*	0.10	0.60	0.15	0.93
LEV	0.00	3.16***	0.00	3.09***	0.00	2.75**
SIZE	0.01	1.50	0.01	0.91	0.01	0.78
BM	0.08	4.73***	0.08	2.70**	0.06	1.66*
PPE	0.00	0.53	0.00	0.42	0.00	0.06
ROA	(0.55)	(3.11)***	(0.28)	(0.61)	(0.20)	(0.83)
INS	(0.20)	(2.42) **	(0.29)	(1.69) *	(0.17)	(0.96)
LEV x INS	0.00	1.98**	0.01	1.82*	0.00	0.36
IND	Yes		Yes		Yes	
YEAR	Yes					
Adjusted R^2	0.07		0.08		0.04	
N	1,902		630		638	

*, **, *** indicates significant at the p<0.10, 0.05, 0.01 level.

LEV refers to total debts divided by total assets in NTD; SIZE denotes the natural logarithm of firm's total assets; BM denotes book value of equity in NTD divided by the market value of equity in NTD; PPE denotes net property, plant, and equipment in NTD divided by the market value of assets in NTD; ROA is the return on assets for continuing operations; INS denotes the dummy variable with a value equal to one if a firm has at least one manager beneficially owning 5% or more of the firm's outstanding common stocks, zero otherwise; LEV x INS denotes an interaction term that indicates the extent to which the existence of a manager who beneficially owns 5% or more of the firm's outstanding common stocks affects leverage; IND is a variable used to control the industry-fixed effect; and YEAR is a variable used to control the year-fixed effect.

Panel B of Table 3 shows that %INS decreases and then increases following an irregular pattern. To determine the effects of the cumulative percentage of ownership of insiders on the BTC-LEV relationship in multiple periods, Table 8 shows the results of the tests using Eq. (4). The coefficients of LEV are consistently positive and significant in the three-year pooled sample, in the pre-and post-years. The INS is a significantly negative moderator on the BTC-LEV relationship and interacts with LEV to support higher conformity in the three-year pooled sample and 2017, thus, supporting hypothesis 3. On the contrary, the results for 2019 show that while the LEV is positive and significantly related to BTC, the %INS does not moderate the BTC-LEV relationship and its interaction with leverage is insignificant, consistent with the results previously presented in Table 7.

While the BM is consistently positive and significant, the coefficients of ROA are negative but inconsistent in significance.

Table 8. The book-tax conformity, leverage, and cumulative ownership in multiple periods

	Three-year pooled sample		**2017**		**2019**	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.17	1.75*	0.13	0.77	0.15	0.92
LEV	0.00	2.28**	0.00	2.22**	0.00	2.43**
SIZE	0.01	1.39	0.01	0.85	0.01	0.84
BM	0.08	4.61***	0.08	2.78**	0.06	1.57
PPE	0.00	0.57	0.00	0.54	0.00	0.03
ROA	(0.58)	(3.28)***	(0.28)	(0.57)	(0.28)	(1.17)
%INS	(0.02)	(3.06)***	(0.02)	(2.26) **	(0.01)	(0.56)
LEV x %INS	0.00	2.43**	0.00	2.33**	0.00	0.27
IND	Yes		Yes		Yes	
YEAR	Yes					
Adjusted R^2	0.07		0.09		0.04	
N	1,902		630		638	

*, **, *** indicates significant at the p<0.10, 0.05, 0.01 level.

LEV refers to total debts divided by total assets in NTD; SIZE denotes the natural logarithm of firm's total assets; BM denotes book value of equity in NTD divided by the market value of equity in NTD; PPE denotes net property, plant, and equipment in NTD divided by the market value of assets in NTD; ROA is the return on assets for continuing operations; %INS denotes the cumulative percentage of stocks owned by all managers; LEV x %INS denotes an interaction term that indicates the extent to which cumulative percentage ownership of all managers affects leverage; IND is a variable used to control the industry-fixed effect; and YEAR is a variable used to control the year-fixed effect.

In summary, the results of the three-year pooled sample show that the INS, and the %INS are significantly negative moderators on the BTC-LEV relationship while interacting with leverage to support positive conformity. This study further tests the year of the implementation of new tax rate, the year before and after. The results for the tests in individual years' samples specifically point that the results of the 2017 sample are consistent with the findings of the pooled sample. However, the results in 2018 (and 2019) sample indicate that the implementation of the new tax rate in 2018 might cause the change in the observed relationship rendering leverage (INS and %INS) insignificant. These findings are likely due to the inability of the insiders to formulate decisive actions in response to the new tax rate or await the impact of the new tax rate on whether they need to take more leverage. The control on more leverage is a precautionary move from the hazard of lost financial flexibility (Molina, 2005), price of bankruptcy (Loney, 2015), or struggle between shareholders and debtholders (Seifert et al. 2005).

The result of a White test for heteroskedasticity indicates there is no evidence of heteroscedasticity. For brevity, the industry- and year-fixed effects are not reported.

4.4. Additional Analysis

To test the robustness of the results of this study, we conduct additional analysis using the existence and cumulative percentage of ownership of outside block holding as alternative monitoring mechanisms. The outside block holders are corporate block holders, who hold at

least 5% of the voting common stock and do not have management functions. Previous studies point out that the presence of institutional block holders may aid as an effective external monitoring tool (Park et al., 2008), especially for firms without insiders (Shleifer and Vishny, 1986; Zhong et al., 2007). The findings of Shleifer and Vishny (1986) and Zhong et al. (2007) seem to suggest that the insiders and the outside block holding may play mutually exclusive roles. We rerun Eq. (3) and (4) using outside block holding as moderating variables. For brevity, the presentation of the detailed results is not reported. The results of the additional analysis indicate that BLOCK and %BLOCK do not play a monitoring role in all years under study. Thus, the results of this study are robust to the alternative monitoring mechanisms.

In comparison between the INS and BLOCK as alternative monitoring mechanisms, the INS and %INS are significant in 2017 and 2018, but the BLOCK and %BLOCK are insignificant in the same years. This finding supports the tendency of INS and BLOCK to be in mutually exclusive roles. However, results in the 2019 sample show neither the INS, %INS, BLOCK nor %BLOCK is significant; hence, the mutually exclusive role playing is not supported.

5. Conclusion and Future Directions

We test for the effects of leverage on conformity over three years period setting the implementation of an increase in CIT rate as central in the study. This study hypothesizes that as firms engage for more leverage, a positive association between conformity and leverage is expected, moreover, the association between conformity and leverage differs with the presence and with the cumulative percentage of ownership by insiders. This study finds that the leverage has a significantly positive link with conformity in the year before and the year immediately after the implementation of the new tax rate, thereby, lending support to the hypothesis that leverage has an influential effect on conformity, consistent with the findings of previous studies.

However, there is no support for the hypothesis on the year of implementation of the new tax rate likely due a precautionary move from the hazard of lost financial flexibility, price of bankruptcy, or struggle between shareholders and debt holders, due to the inability of the insiders to formulate decisive actions or await the impact of the new tax rate.

The hypotheses on the presence and the cumulative insider ownership over the BTC-LEV relationship are supported in the three-year pooled sample, and the year before the new tax rate. These findings indicate that the implementation of the new tax rate causes a substantial change in the observed relationship rendering leverage (the presence, and the cumulative insider ownership) insignificant in the year of (in the year immediately after) the

implementation of the new tax rate. The results of this study are robust to alternative monitoring mechanisms.

The results of this study are expected to enrich the literature on the role of insiders, and the evidence of financial leverage as a factor of book-tax conformity. In addition, insights on the role of outside block holding as alternative monitoring mechanisms are illustrated. These results update the understanding of the local and foreign investors, tax and market regulators, and the academe and researchers.

The tests used in this study are limited to an aggregate sample. Future research may consider tests of the sample by firm size, levels of ownership, or industry. The results on small, medium-sized, and large firms, low and high ownership, and by industry may show dissimilar outcomes.

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