# DO COUNTRY CHARACTERISTICS AFFECT THE COMPLEMENTARY LEVEL OF FINANCIAL AND TAX AGGRESSIVENESS?

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## ABSTRACT

*This study aims to examine whether two country characteristics—book-tax conformity and law enforcement—affect the complementary level of financial and tax aggressiveness. Previous studies have produced inconclusive results for the relationship between financial and tax aggressiveness. This study fills the gap by examining the country-level determinants of the complementary level of financial and tax aggressiveness. It also develops a new measure of the complementary level of financial and tax aggressiveness. Using a sample of firms from 15 countries in East Asia and Europe from 2014 to 2016, this study finds that firms from countries with higher book-tax conformity and stronger law enforcement tend to have a lower complementary level of financial and tax aggressiveness. In an additional test, this study shows that in countries with lower book-tax conformity, the effect of law enforcement on the complementary level of financial and tax aggressiveness is stronger than in countries with higher book-tax conformity. These results suggest that country characteristics influence managers' decisions to either present financial statements and tax reporting aggressively at the same time or not.*

**Keywords:** Complementary level of financial and tax aggressiveness, book-tax conformity, law enforcement

## INTRODUCTION

This study examines the impact of two country characteristics—book-tax conformity and law enforcement—on the complementary level of financial and tax aggressiveness. Financial accounting standards (in this context the International Financial Reporting Standards, IFRS) allow firms to choose the accounting methods they use to estimate their accruals (Subramanyam, 1996). This flexibility can in turn affect the earnings quality of firms. Fields, Lys and Vincent (2001) explain that an accounting choice is any decision whose primary purpose is to influence (in either form or substance) the output of the accounting system in a particular way, including not only financial statements published in accordance with financial accounting standards, but also tax returns and regulatory filings.

Based on agency theory, management and majority shareholders, as insider parties, can take advantage of these flexibilities to pursue opportunistic action aimed at maximising their utility (Jensen & Meckling, 1976; Fama & Jensen, 1983), such as financial reporting aggressiveness and/or tax aggressiveness (Procházka & Molin, 2016). We follow Frank, Lynch and Rego (2009) and define financial reporting aggressiveness as upward earnings management that may or may not be within the confines of financial accounting standards. Meanwhile, tax aggressiveness is defined as the downward management of taxable income through tax planning that may or may not be considered fraudulent tax evasion. Kellogg and Kellogg (1991) suggest that firms generally engage in financial reporting aggressiveness in order to increase their firm value as a means of encouraging investors to invest their capital. Tax aggressiveness, on the other hand, is conducted with the aim of raising the utility of insider parties through earnings after tax distribution, such as bonuses or dividends (Kim, Li, & Zhang, 2011), to increase cash flow efficiency (Mills, 1998), and to alleviate financial constraints (Edwards, Schwab, & Shevlin, 2016).

This research is interesting to examine for several reasons. First, previous studies that have examined the relationship between financial and tax aggressiveness have produced inconclusive results (Erickson, Hanlon, & Maydew, 2004; Frank et al., 2009; Badertscher, Phillips, & Pincus, 2009; Heltzer, Mindak, & Shelton, 2012; Lisowsky, Robinson, & Schmidt, 2013; Lyon, 2014; Heltzer, Mindak, & Zhou, 2015). Based on Wilde and Wilson (2018), this inclusive result could be mainly due to the different measures and proxies for financial and tax aggressiveness. In this study, we fill the gap by examining the factors leading to these inconclusive results. We examine the country-level determinants of a complementary level of financial and tax aggressiveness. We define a complementary level of financial and tax aggressiveness as the probability of a firm presenting its financial statements and tax reporting aggressively at the

same time. No prior studies have examined the complementary level of financial and tax aggressiveness; therefore, this study develops a way of measuring it. Based on agency theory, agency problems can occur between agent and principle (Jensen & Meckling, 1976). To maximise the utility, manager, as an agent, can conduct financial and tax aggressiveness simultaneously (Rachmawati et al., 2019). Second, previous studies have tended to focus on a single country, most commonly the United States (Erickson et al., 2004; Frank et al., 2009; Badertscher et al., 2009; Heltzer et al., 2012; Lisowsky et al., 2013; Lyon, 2014; Heltzer et al., 2015; Rachmawati & Martani, 2017). In reality, the level of financial and tax aggressiveness differs across countries (Tang, 2014). We conduct our empirical analyses using a sample of firms listed in East Asia and Europe. Third, no prior studies have investigated the country-level determinants of the complementary level of financial and tax aggressiveness. This study considers the diversity of the costs faced by firms (such as the level of detection risk) when presenting financial and tax reporting aggressively at the same time. This cost can be a factor in restricting the opportunistic action taken by firms. In this study, the level of detection risk is proxied by two country characteristics—book-tax conformity and law enforcement.

We regress our measure of the complementary level of financial and tax aggressiveness on the country characteristics of book-tax conformity and law enforcement. We hypothesise and find that firms from countries with higher book-tax conformity tend to engage in a lower complementary level of financial and tax aggressiveness. In this study, we develop a new measure of book-tax conformity due to the fact that previous measures have not taken into account the uniqueness of firms' behaviour across industries in a country (Atwood, Drake, & Mayers, 2010; Rachmawati & Martani, 2017). Furthermore, we hypothesise and find that firms from countries with stronger law enforcement tend to engage in a lower complementary level of financial and tax aggressiveness. This study also develops a more comprehensive measure of law enforcement. In contrast to previous studies, we combine law enforcement measures related to financial and tax aggressiveness in such a way that better represents the types of law enforcement capable of restricting the financial and tax aggressiveness activities carried out by firms at the same time. We further investigate whether the effect of law enforcement on the complementary level of financial and tax aggressiveness differs across book-tax conformity levels. This study suggests that countries with higher book-tax conformity have higher levels of detection risk than countries with lower book-tax conformity (Erickson et al., 2004; Desai, 2005). Thus, the role played by law enforcement with regard to the complementary level of financial and tax aggressiveness in those countries with lower book-tax conformity is stronger than that found in countries with higher book-tax conformity.

Overall, our results contribute to the literature on cross-country variation in financial and tax aggressiveness. The results suggest that country characteristics influence managers' decisions on whether or not to present financial statements and tax reporting aggressively at the same time. Our study is likely to be of interest to tax policymakers concerned about the effect of book-tax conformity and law enforcement on the complementary level of financial and tax aggressiveness. This study shows that every tax regulation, whether aligned with financial accounting standards.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENTS

### Book-Tax Conformity

There are two conflicting opinions with regard to the impact of book-tax conformity on earnings quality. The first opinion is that book-tax conformity can improve the earnings quality of firms. Based on this opinion, book-tax conformity can minimise financial and tax aggressiveness (Desai, 2005; Whitaker, 2006 in Atwood et al., 2010). Meanwhile, the second opinion is that book-tax conformity can reduce earnings quality due to the fact that the information required by stakeholders and tax regulators is substantially different (Hanlon, Laplante, & Shevlin, 2005; Hanlon, 2005; Plesko, 2006 in Atwood et al., 2010; Shackelford, 2006 in Atwood et al., 2010). This inclusive result could be mainly due to the different measures and proxies for financial and tax aggressiveness (Wilde & Wilson, 2018).

Based on agency theory, manager, as an agent, can conduct financial and tax aggressiveness simultaneously to maximise the utility (Rachmawati et al., 2019). However, if we consider the diversity of the costs facing firms (such as the level of detection risk), managers' tendency to pursue opportunistic action in countries with high book-tax conformity is reduced. Blaylock, Gaertner and Shevlin (2015) suggest that high book-tax conformity can mitigate the incentive to manage earnings by forcing upward earnings management to be met with higher taxes and forcing downward tax management to decrease the earnings reported to investors. Using a sample of firms from 22 countries, Atwood et al. (2012) show that firms in home countries with higher required book-tax conformity engage in less tax avoidance.

The flexibility of accounting choices is limited in countries in which there is a close alignment between financial accounting standards and tax regulation (Desai, 2005; Blaylock et al., 2015; Tang, 2014), so that there is an increasing level

of comparability between financial and tax reporting (Desai, 2005). If financial and tax reporting are more easily compared, then savvy investors, the capital market authority, and the tax authorities will tend to become suspicious of firms that present financial and tax reporting aggressively at the same time. As such, financial and tax aggressiveness would be more easily detected and there would be greater potential for the imposition of sanctions by regulators (Erickson et al., 2004; Desai, 2005). Firms that conduct financial and tax reporting aggressively at the same time face a greater cost (in terms of a high detection risk) in countries with higher book-tax conformity. This study suggests that in those countries with higher book-tax conformity, firms tend to engage in a lower complementary level of financial and tax aggressiveness. In accordance with this argument, our first hypothesis is formally stated as follows:

> H1: In countries with higher book-tax conformity, firms tend to engage in a lower complementary level of financial and tax aggressiveness.

**Law Enforcement**

A country's law enforcement is one means of investor protection capable of protecting the rights of minority shareholders against expropriation risk and opportunistic action carried out by firms as insider parties (LaPorta et al., 1997, 1998, 2006). Strong law enforcement can reduce the incentive of managers and majority shareholders to engage in expropriation and opportunistic action such as manipulating earnings (Hung, 2001; Leuz, Nanda, & Wysocki, 2003; DeFond, Hung, & Trezevant, 2007; Hanlon, Hoopes, & Shroff, 2014) and taxable income (Hoopes, Mescall, & Pittman, 2011; Atwood et al., 2012). The stronger a country's law enforcement, the greater the level of monitoring carried out by regulators and the greater the risk of litigation that will be faced by firms (Atwood et al., 2012; Hoopes, Mescall, & Pittman, 2012; Hanlon et al., 2014). Using a sample of firms from 22 countries, Atwood et al. (2012) show that firms' resident in countries where tax enforcement is perceived to be stronger engage in less tax avoidance. Thus, financial and tax aggressiveness would be more easily detected in a country with strong law enforcement and would potentially carry a greater risk of incurring sanctions by regulators (Atwood et al., 2012). Firms presenting financial and tax reporting aggressively at the same time will face a greater cost (in terms of a high detection risk) in countries with stronger law enforcement. In line with this argument, we suggest that in countries with stronger law enforcement, firms tend to engage in a lower complementary level of financial and tax aggressiveness. Our second hypothesis is thus formally stated as follows:

H2: In countries with stronger law enforcement, firms tend to engage in a lower complementary level of financial and tax aggressiveness.


## RESEARCH METHODOLOGY

### Measure of the Complementary Level of Financial and Tax Aggressiveness (COMP)

In this study, the complementary level of financial and tax aggressiveness (*COMP*) is measured via several stages. First, financial reporting aggressiveness is calculated using performance-matched discretionary accruals (*DFIN*). The measurement of discretionary accruals is based on the Modified Jones Model (Dechow, Sloan, & Sweeney, 1995), while the measurement of performance matching is based on Francis et al. (2005). The larger the value of *DFIN*, the larger the financial reporting aggressiveness of the firms. Second, tax aggressiveness is calculated using the discretionary permanent differences (*DTAX*) following Frank et al. (2009). The larger the value of *DTAX*, the greater the tax aggressiveness of the firms. Third, *DFIN* and *DTAX* are classified into quintiles by country-years. Depending on the quintile combination for *DFIN* and *DTAX*, we classify a firm into one of four groups. For the first group, if the quintile combination for *DFIN* and *DTAX* consists of firms that perform financial and tax aggressiveness at the same time (i.e., the magnitudes of *DFIN* and *DTAX* are both positive), then the firms in this group are classified as having a high complementary level of financial and tax aggressiveness. For the second group, if the *DFIN* and *DTAX* quintile combination consists of firms that perform either financial or tax aggressiveness only (i.e., the magnitude of either *DFIN* or *DTAX* is positive), then the firms in this group are classified as having a low complementary level of financial and tax aggressiveness. In the third group, if the *DFIN* and *DTAX* quintile combination comprises firms that perform financial and/or tax aggressiveness (i.e., the magnitude(s) of *DTAX* and/or *DFIN* are/is positive), then the firms in this group are removed from the sample because the relationship between *DFIN* and *DTAX* is ambiguous. For the fourth group, if the quintile combination for *DFIN* and *DTAX* consists of firms that do not engage in financial and tax aggressiveness (i.e., the magnitudes of *DFIN* and *DTAX* are both negative), then the firms in this group are removed from the sample. *COMP* is a dummy variable that is equal to 1 if the complementary level of financial and tax aggressiveness for firm *i* in year *t* is high, and 0 if otherwise.

**Measure of Book-Tax Conformity**

Different from Atwood et al. (2010), this study considers the effect of the uniqueness of firms' behaviour across various industries in a country. Firms have a tendency to engage in unique earnings management and tax management activities that differ across industry-country-year (Dechow et al., 1995). In the cross-country setting, countries with a greater level of earnings management and tax management activities will display lower book-tax conformity than their counterparts (Tang, 2014). To alleviate this concern, we estimate the book-tax conformity models below by industry-country-year:

$$TI_{it} = \rho_0 + \rho_1 PTBI_{it} + \rho_2 FORPTBI_{it} + \rho_3 DIV_{it} + \epsilon_{it}$$

Where $TI_{it}$ is taxable income of firm $i$ in year $t$ ($CTE_{it}/STR_{it}$). $CTE_{it}$ is current tax expense of firm $i$ in year $t$. $STR_{it}$ is statutory tax rate in year $t$. $PTBI_{it}$ is pre-tax book income of firm $i$ in year $t$. $FORPTBI_{it}$ is foreign $PTBI$ for firm $i$ in year $t$ (foreign tax expense/total tax expense × $PTBI$). $DIV_{it}$ is total dividends of firm $i$ in year $t$. All of the variables are scaled by the average total assets in years $t$–1 and $t$.

We require each industry-country-year combination to have at least ten firm-year observations. This requirement enables the variables to be estimated efficiently for each industry (Kothari, Leone, & Wasley, 2005; Dechow et al., 1995). We exclude firms with a negative pre-tax book income and negative *CTE* since these firms display unique behaviour and are treated specially for the purpose of taxation (Atwood et al., 2010; 2012; Tang, 2014; Blaylock et al., 2015). Different from Atwood et al. (2010), this study uses taxable income (*TI*) as the dependent variable (instead of *CTE*) because it is more comparable with the independent variables used (*PTBI*, *FORPTBI* and *DIV*). From the error ($\epsilon_{it}$) generated by this estimation, we then calculate the root mean square error (RMSE) by country-year to exhibit the variation in the TI of firms across industries in a country. A higher (lower) RMSE indicates lower (higher) book-tax conformity. Since the relationship between RMSE and book-tax conformity is negative, the RMSE values are multiplied by −1 to facilitate interpretation of the results.

**Measure of Law Enforcement**

This study combines three measures of law enforcement obtained from the Global Competitiveness Report, namely: (1) tax enforcement index; (2) protection of minority investor index; and (3) effectiveness of the capital market regulator

index. These measures are combined using confirmatory factor analysis to produce a new law enforcement variable (*ENFOR*). A larger value of *ENFOR* indicates stronger law enforcement in a country.

**Research Model**

This research uses a binary logistic model because the dependent variable in this model is a dummy variable (*COMP*). Specifically, we estimate the following model:

$$Pr(COMP_{it} = 1) = \frac{e_0^\alpha + \alpha_1 BTC_{it} + \alpha_2 ENFOR_{it} + \alpha_k CONTROL_k + \varepsilon_{it}}{1 + e_0^\alpha + \alpha_1 BTC_{it} + \alpha_2 ENFOR_{it} + \alpha_k CONTROL_k + \varepsilon_{it}}$$

where $COMP_{it}$ is dummy variable, equal to 1 if the complementary level of financial and tax aggressiveness for firm $i$ in year $t$ is high, and 0 if otherwise. $BTC_{it}$ is book-tax conformity in the country of firm $i$ in year $t$. $ENFOR_{it}$ is law enforcement in the country of firm $i$ in year $t$. The control variables consist of $GDP_{it}$, $STR_{it}$, $DTSYS_{it}$, $SIZE_{it}$, $GROW_{it}$, $LEV_{it}$, $DLOSS_{it}$, $ROA_{it}$, $DINDUSTRY_{it}$, and $DYEAR_{it}$. $GDP_{it}$ is natural log of gross domestic product (GDP) in the country of firm $i$ in year $t$. $STR_{it}$ is statutory tax rate in the country of firm $i$ in year $t$. $DTSYS_{it}$ is dummy variable, equal to 1 for firms in countries with a territorial approach, and 0 if otherwise. $SIZE_{it}$ is natural log of total assets of firm $i$ in year $t$. $GROW_{it}$ is sales growth of firm $i$ in year $t$. $LEV_{it}$ is calculated as total of short term debt and long term debt devided by total assets of firm $i$ in year $t$. $DLOSS_{it}$ is dummy variable, equal to 1 for firm $i$ with negative pre-tax book income in year $t$, and 0 if otherwise. $ROA_{it}$ is calculated by pre-tax income devided by total assets of firm $i$ in year $t$. $DINDUSTRY_{it}$ is industry dummy variable. $DYEAR_{it}$ is year dummy variable.

This model is used to test H1 and H2. In testing H1, this study suspects that firms from countries with higher book-tax conformity tend to engage in a lower complementary level of financial and tax aggressiveness. If presented in its statistical form, then H1: $\alpha 1 < 0$. In testing H2, this study suspects that firms from countries with stronger law enforcement tend to engage in a lower complementary level of financial and tax aggressiveness. If presented in its statistical form, then H2: $\alpha 2 < 0$. This study uses GDP to control for a country's unobservable institutional factors that affect the development of the country's capital market and the tendency of insider parties to perform an opportunistic action (Leuz, et al., 2003; Haw et al., 2004). This study includes *STR* as an important control variable in determining the impact of tax system characteristics on tax aggressiveness (Atwood et al., 2012; Tang, 2014). This study also uses

*DTSYS* to distinguish between firms from countries with a worldwide versus a territorial approach to the taxing of foreign income. These data were hand-collected from the PricewaterhouseCoopers Corporate Taxes: A Worldwide Summary guides and the Ernst & Young Worldwide Corporate Tax Guide for 2014 through 2016. This study also includes *DLOSS* as a control variable since loss-making firms are treated specially in taxation (Atwood et al., 2010; 2012; Tang, 2014; Blaylock et al., 2015). This study also includes *SIZE*, *GROW*, *LEV* and *ROA* as firm-specific control variables.

## EMPIRICAL RESULTS

### Sample Selection

We conducted our empirical analyses using a sample of firms listed in seven East Asian countries (Philippines, Hong Kong, Indonesia, South Korea, Malaysia, Singapore and Taiwan) and eight countries in Europe (the Netherlands, Denmark, Finland, Italy, Germany, France, Spain and Sweden) as firms in those countries generally have a concentrated ownership structure (LaPorta, Lopez-de-Silanes, & Shleifer, 1999; Claessens, Djankov, & Lang, 2000; Haw et al., 2004). Thus, the effect of the ownership structure on the complementary level of financial and tax aggressiveness has been controlled. We selected our sample from the Thomson Reuters Eikon database from 2014 to 2016 with sufficient data to calculate the variables. This paper applies several data filters. First, firms in the financial sector are not included since this industry sector is highly regulated. Second, a firm's income tax is based on the TI and general income tax rates. The real estate sector is treated specially in taxation and is thus removed from the sample. Third, the selected firms must have all of the components required as variables in this research. Lastly, those firms occupying the top and bottom 1% of the total sample in each year are deleted in order to remove potential outliers. Table 1 presents the sample composition used in this study. The final sample used in this research comprised 9,770 firm-year observations. Based on Table 1, Italy was the country with the highest book-tax conformity in 2014 and 2015, while Germany had the lowest book-tax conformity for the same years. Meanwhile, Spain had the lowest book-tax conformity in 2016 owing to the fact that the Spanish statutory tax rate was changed during the study period. Table 1 also shows that Italy was the country with the lowest law enforcement, while Finland had the highest.

Table 1
*Sample composition*

| All observations, excluding the financial and real estate sectors | | | | | | | 21,750 |
|---|---|---|---|---|---|---|---|
| (-) Firms with no data available to estimate COMP | | | | | | | (10,990) |
| (-) Firms with no data available to estimate BTC | | | | | | | (220) |
| (-) Firms with no data available to test the hypotheses | | | | | | | (570) |
| Total Observations | | | | | | | 9,970 |

| Country | Obs. | % | BTC | | | Law Enforcement | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2014 | 2015 | 2016 | 2014 | 2015 | 2016 |
| Denmark | 73* | 0.75 | −0.044 | −0.037 | −0.053 | 0.398 | 0.601 | 0.633 |
| Finland | 140 | 1.43 | −0.029 | −0.035 | −0.039 | 1.498** | 1.532** | 1.564** |
| France | 634 | 6.49 | −0.029 | −0.028 | −0.029 | −0.262 | −0.153 | 0.271 |
| Germany | 552 | 5.65 | −0.098* | −0.093* | −0.095 | −0.125 | 0.034 | 0.128 |
| Hong Kong | 1,272 | 13.02 | −0.095 | −0.072 | −0.080 | 1.003 | 1.037 | 1.037 |
| Indonesia | 249 | 2.55 | −0.040 | −0.037 | −0.034 | −0.950 | −1.103 | −1.087 |
| Italy | 216 | 2.21 | **−0.027**** | **−0.023**** | **−0.028**** | **−1.813*** | **−1.579*** | **−1.799*** |
| Korea | **2,454**** | **25.12** | −0.047 | −0.050 | −0.050 | −1.624 | −1.265 | −1.217 |
| Malaysia | 757 | 7.75 | −0.045 | −0.050 | −0.048 | 0.260 | 0.212 | 0.041 |
| The Netherlands | 82 | 0.84 | −0.036 | −0.027 | −0.043 | 0.513 | 0.642 | 0.676 |
| Philippines | 143 | 1.46 | −0.047 | −0.029 | −0.034 | −0.948 | −0.930 | −1.022 |
| Singapore | 472 | 4.83 | −0.050 | −0.050 | −0.066 | 1.099 | 1.224 | 1.397 |
| Spain | 83 | 0.85 | −0.045 | −0.039 | **−0.113*** | −1.249 | −1.122 | −0.919 |
| Sweden | 423 | 4.33 | −0.056 | −0.068 | −0.060 | 0.558 | 0.624 | 1.049 |
| Taiwan | 2,220 | 22.72 | −0.044 | −0.051 | −0.048 | 0.216 | 0.421 | 0.499 |
| Total | 9,770 | 100.00 | | | | | | |

*Note*: *Lowest; ** Highest

## Descriptive Statistics

Table 2 Panel A contains the descriptive statistics for the full sample. A total of 3,097 firm-year (31.69%) observations have a high complementary level of financial and tax aggressiveness, while 6,673 (68.31%) firm-year observations have a low complementary level of financial and tax aggressiveness. Table 2 Panel B shows that *BTC* and *ENFOR* are negatively correlated with *COMP*, in accordance with the hypothesis. Table 2 also shows that there is no indication of multicollinearity across the independent variables.

Table 2
*Descriptive statistics and Pearson correlation*

| Panel A: Descriptive Statistics | | | | | | |
|---|---|---|---|---|---|---|
| Variable | Obs. | Mean | Median | Minimum | Maximum | S. D. |
| BTC | 9.770 | −0.05 | −0.05 | −0.02 | −0.11 | 0.02 |
| ENFOR | 9.770 | −0.08 | 0.22 | −1.81 | 1.56 | 0.95 |
| GDP | 9.770 | 11.87 | 11.72 | 11.37 | 12.59 | 0.35 |
| STR | 9.770 | 0.21 | 0.22 | 0.15 | 0.33 | 0.05 |
| SIZE | 9.770 | 8.10 | 8.01 | 5.71 | 10.42 | 0.71 |
| GROW | 9.770 | −0.00 | 0.00 | −0.68 | 0.68 | 0.13 |
| LEV | 9.770 | 0.14 | 0.10 | 0.00 | 0.82 | 0.15 |
| ROA | 9.770 | 0.03 | 0.04 | −0.69 | 0.73 | 0.13 |

| | Dummy = 1 | | | Dummy = 0 | |
|---|---|---|---|---|---|
| | Obs. | % | | Obs. | % |
| COMP | 3.097 | 31.69 | | 6.673 | 68.31 |
| DTSYS | 3.208 | 32.84 | | 6.562 | 67.16 |
| DLOSS | 2.523 | 25.82 | | 7.247 | 74.18 |

| Panel B: Pearson Correlation | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1 COMP | 1.00 | | | | | | | | | | |
| 2 BTC | −0.01 | 1.00 | | | | | | | | | |
| 3 ENFOR | −0.02 | −0.36 | 1.00 | | | | | | | | |
| 4 GDP | 0.01 | 0.11 | −0.67 | 1.00 | | | | | | | |
| 5 STR | 0.00 | 0.60 | −0.44 | 0.36 | 1.00 | | | | | | |
| 6 DTSYS | 0.01 | −0.21 | 0.52 | −0.41 | 0.18 | 1.00 | | | | | |
| 7 SIZE | −0.04 | −0.00 | −0.06 | 0.06 | 0.05 | 0.01 | 1.00 | | | | |
| 8 GROW | 0.00 | −0.04 | 0.01 | 0.00 | −0.03 | −0.03 | −0.01 | 1.00 | | | |
| 9 LEV | −0.00 | 0.11 | −0.11 | 0.08 | 0.05 | −0.11 | 0.25 | −0.01 | 1.00 | | |
| 10 ROA | −0.02 | 0.03 | 0.01 | −0.05 | −0.03 | −0.05 | 0.11 | 0.15 | −0.12 | 1.00 | |
| 11 DLOSS | 0.05 | 0.02 | 0.05 | −0.02 | −0.05 | 0.01 | −0.21 | −0.18 | 0.02 | −0.62 | 1.00 |

## Results

Table 3 presents the estimation results of the effect of book-tax conformity and law enforcement on the complementary level of financial and tax aggressiveness. Based on Table 3 Columns (1) and (3), the coefficient of *BTC* is negative and significant at the 10% level. These results indicate that in countries with higher book-tax conformity, firms tend to engage in a lower complementary level of financial and tax aggressiveness. Thus, H1 is proven. The results support the opinion that high book-tax conformity can improve the earnings quality of firms (Desai, 2005; Whitaker, 2006 in Atwood et al., 2010). The flexibility of accounting choices is limited in countries with higher book-tax conformity (Desai, 2005; Blaylock et al., 2015; Tang, 2014), so that there is an increasing level of comparability between financial and tax reporting (Desai, 2005). If financial and tax reporting are more easily compared, financial and tax aggressiveness would be more easily detected and there would be greater potential for the imposition of sanctions by regulators (Erickson et al., 2004; Desai, 2005). Firms that conduct financial and tax reporting aggressively at the same time face a greater cost (in terms of a high detection risk) in countries with higher book-tax conformity.

Next, Table 3 Columns (2) and (3) show that the coefficient of *ENFOR* is negative and significant at the 1% level. These results indicate that in countries with stronger law enforcement, firms tend to engage in a lower complementary level of financial and tax aggressiveness. Thus, H2 is proven. The stronger the law enforcement, the greater the level of monitoring carried out by the regulators and the greater the risk of litigation that firms will face (Atwood et al., 2012; Hoopes et al., 2012; Hanlon et al., 2014). In addition, the stronger the law enforcement, the higher the detection risk and the potential penalties that will be faced by firms (Atwood et al., 2012). Thus, in countries with strong law enforcement, firms will face greater cost (in terms of high detection risk) when presenting financial and tax reporting aggressively at the same time. Firms from countries with strong law enforcement will take care over the presentation of their financial statements and tax reporting because they are required to present their financial information in a good quality.

This result shows that only *STR* and *DTSYS* as country level control variables affecting *COMP*. The results support the opinions of Atwood et al. (2012) and Tang (2014). This result also shows that only $SIZE_{it}$, $GROW_{it}$, $LEV_{it}$ and $ROA_{it}$ as firm level control variables affecting *COMP*.

Table 3

*Logit regressions of book-tax conformity and law enforcement on complementary level of financial and tax aggressiveness*

| | Exp. sign | Coef. | Sig. | Effect marg. | Coef. | Sig. | Effect marg. | Coef. | Sig. | Effect marg. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (1) | | | (2) | | | (3) | | |
| BTC | H1: − | −2.91 | 0.07* | −0.63 | − | − | − | −2.86 | 0.08* | −0.62 |
| ENFOR | H2: − | − | − | − | −0.12 | 0.00*** | −0.03 | −0.12 | 0.00*** | −0.03 |
| Cons. | | −1.97 | 0.02** | | −0.001 | 0.50 | | −0.44 | 0.35 | |
| Controls | | | | Yes | | | Yes | | | Yes |
| DINDUSTRY | | | | Yes | | | Yes | | | Yes |
| DYEAR | | | | Yes | | | Yes | | | Yes |
| LR chi$^2$ | | | | 52.90 | | | 60.86 | | | 62.87 |
| Prob. | | | | 0.00 | | | 0.00 | | | 0.00 |
| Pseudo $R^2$ | | | | 4.30% | | | 5.00% | | | 5.20% |
| N | | | | 9.770 | | | 9.770 | | | 9.770 |

*Notes*: *, ** and *** indicate significance at 10%, 5% and 1%, respectively.

## Sensitivity Analysis

This study applies several sensitivity analyses. First, we exclude firms listed in Hong Kong, South Korea, and Taiwan from the sample because the total observations in these countries account for more than 50% of the full sample. This test aims to ensure that the primary results (see Table 3) are not influenced by the large number of firms in the aforementioned three countries. This testing shows results (untabulated) that are consistent with the primary results. Second, this study alters the measure of book-tax conformity to those measures developed by Atwood et al. (2010) and Rachmawati and Martani (2017). This test aims to ensure that the primary results is robust. This testing reveals results (untabulated) that are consistent with the primary results.

## Additional Test

This study applies an additional test to investigate whether law enforcement plays a different role in the complementary level of financial and tax aggressiveness across countries with high and low book-tax conformity. Table 4 shows that in those countries with high book-tax conformity, we fail to prove the role of law enforcement on the complementary level of financial and tax aggressiveness (insignificant). This occurs because in countries with high book-tax conformity, there is limited flexibility in the choice of accounting methods permitted in the

financial accounting standards and tax regulation (Desai, 2005; Blaylock et al., 2015; Tang, 2014), which means that the financial statement and tax reporting can be compared to each other (Desai, 2005). If the financial and tax reporting are more easily compared, then savvy investors, the capital market authority, and the tax authority will tend to become suspicious of those firms that present their financial and tax reporting aggressively at the same time. Thus, the role of law enforcement on the complementary level of financial and tax aggressiveness in countries with high book-tax conformity is not proven. Meanwhile, in countries with low book-tax conformity, the effect of law enforcement on the complementary level of financial and tax aggressiveness is negatively significant at the 1% level. In this context, there is a high degree of flexibility with regard to the choice of accounting methods permitted within the financial accounting standards and tax regulation, which means that firms have greater opportunity to draw up financial statements and tax reporting aggressively at the same time. Thus, law enforcement in these countries has an important role in reducing the tendency of firms to engage in a high complementary level of financial and tax aggressiveness.

Table 4

*Logit regressions of law enforcement on complementary level of financial and tax aggressiveness across countries with high and low book-tax conformity*

|  | Exp. Sign | High Book-Tax Conformity | | | Low Book-Tax Conformity | | |
|---|---|---|---|---|---|---|---|
|  |  | Coef. | Sig. | Effect marg. | Coef. | Sig. | Effect marg. |
|  |  | (1) | | | (2) | | |
| *ENFOR* | − | −0.14 | 0.13 |  | −0.23 | 0.03** |  |
| Cons. |  | 0.50 | 0.74 |  | −5.80 | 0.06* |  |
| Controls |  |  |  | Yes |  |  | Yes |
| *DINDUSTRY* |  |  |  | Yes |  |  | Yes |
| *DYEAR* |  |  |  | Yes |  |  | Yes |
| LP chi$^2$ |  |  |  | 23.56 |  |  | 38.40 |
| Prob. |  |  |  | 0.00 |  |  | 0.00 |
| Pseudo $R^2$ |  |  |  | 3.20% |  |  | 8.00% |
| *N* |  |  |  | 6.020 |  |  | 3.750 |

*Notes*: *, ** and *** indicate significance at 10%, 5% and 1%, respectively.

## CONCLUSIONS

This study has examined the impact of two country characteristics—book-tax conformity and law enforcement—on complementary levels of financial and tax aggressiveness. This research shows that country characteristics play an important role in the complementary level of financial and tax aggressiveness. Using a sample of firms from 15 countries in East Asia and Europe from 2014 to 2016, we find that firms from countries with higher book-tax conformity and stronger law enforcement tend to engage in a lower complementary level of financial and tax aggressiveness. Furthermore, this study also shows that in countries with low book-tax conformity, the effect of law enforcement on the complementary level of financial and tax aggressiveness is stronger than in countries with high book-tax conformity. Overall, the findings of this study contribute to the literature that investigates cross-country variation in financial and tax aggressiveness. Our paper has implications for tax policymakers concerned about the effect of book-tax conformity and law enforcement on the complementary level of financial and tax aggressiveness. This research shows that every tax regulation, whether it is aligned or not with financial accounting standards, has a unique impact on the complementary level of financial and tax aggressiveness. Nevertheless, regulators can anticipate this issue by clarifying and reaffirming the implementation of regulation through strong law enforcement, especially in countries characterised by low book-tax conformity. However, we do suggest a caveat with regard to our results. This study has not examined any firm-level determinants of the complementary level of financial and tax aggressiveness. Thus, we suggest that further research is needed to investigate this area.

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