Peer Pressure on Tax Avoidance: A Special Perspective from Firms' Fiscal Year-Ends

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Considering the fact that more than 60% of U.S. firms' fiscal year-ends fall on December 31, we expect that the synchronicity of those firms' fiscal periods creates peer pressure among them. We hypothesize that this peer pressure induces tax avoidance behaviors. Using five tax avoidance measures from the literature, we find that those "December" firms consistently display more tax avoidance activities than "non-December" firms. Firms that change from non-December to December year-ends experience significant increases in their tax avoidance levels. Those results support our premise that the time-based peer pressure leads to firms' aggressive tax planning.

INTRODUCTION

Tax avoidance has been extensively studied in the literature. However, as mentioned in Hanlon and Heitzman's (2010) review of tax research, overall the literature does not explain the variation in tax avoidance very well. To find the determinants of tax avoidance behaviors, prior studies focus on variables such as financial characteristics, governance, ownership, and compensation structure. Different from those previous studies, we attempt to explain tax avoidance with a variable that the literature seems to ignore or lose interest in over the years: firms' fiscal year-end.

Among the extremely limited and sometimes decades-old literature about firms' fiscal-period choices, several studies try to find why many firms choose December over other months as their fiscal year-ends (see Smith and Pourciau, 1988; Huberman and Kandel, 1989; Kamp, 2002). However, their results seem to attract little interest due to the following reasons: First, as evident in many accounting textbooks, the profession has already reached the consensus that firms simply choose fiscal year-ends according to their operating cycles. Because of this consensus, fiscal year-end seems trivial as a research topic. Another reason for the limited attention to this topic is due to the little firm-level variation of fiscal year-end (less than 1% of firm-year observations report changes in their fiscal year-ends). However, the above two reasons that limit the research interest in fiscal year-end also contributes to the exogeneity of this variable in a typical research design.

"Peers" is a buzzword for corporate decisions, such as production levels, location selections, timing of public financing, executive compensation and retention. This peer awareness corresponds to market's habitual peer-group-based stock valuation and firm-performance analysis. The seemingly inevitable peer pressure has also been shown to affect corporate financial reporting. For example, the product market

competition may induce firms to manipulate earnings so as to better compete with their peers in the same industry. The literature typically identifies peer firms by their industry classifications and shows the peer influence or spillover effects within the industry. We approach the issue of peer pressure on corporate behaviors from a special perspective by looking at firms' financial reporting timing and expect it to create industry-time peers. The rationale is as follows:

While the market promptly evaluates and compares firms based on reported financial performance, the time point at which firms provide such information varies due to their different fiscal year-ends. In the U.S., more than 60% of public companies share the same December 31 year-end (hereafter referred to as "December" firms). The rest firms have their fiscal year-ends in the other 11 months. We argue that such a concentration at a specific point can create the peer pressure on those firms and consequently influence their corporate behaviors.

We make the following conjectures about the channels through which firms' concentration creates peer pressure. From information users' perspectives, firms that have the same fiscal period are aligned with each other in business cycles and operations. Because of the concentration of firms' fiscal year-ends in December as opposed to other months, it is easier for outsiders to compare the performance between December firms than between non-December firms. The time and macro-economic effects are automatically controlled for in such comparisons. For non-December firms, the time-industry peers are less likely to be found or less perfectly found due to much smaller pools of firms that end their fiscal years in the same months. The fact that all of those December firms release their annual reports at the beginning of next year may further increase their competition to impress investors.

From the perspective of firms' operations, because of the aligned business cycles, those December firms may fight for limited resources at the same time point, such as renewing customer contracts, procurement of supplies, finding rental spaces, and hiring executive talents.

In this study, we look for evidence that fiscal-cycle-induced peer pressure affects corporate behaviors. Specifically we look at the behavior of tax avoidance. We provide consistent evidence that December firms have a higher level of tax avoidance than non-December firms. The results remain strong, statistically and economically, after we control for variables that may affect corporate tax avoidance. Although firms rarely change their fiscal year-ends, we also focus on a small group of firms that have actually made such a change and analyze their before- and after-change tax avoidance levels. Consistently, we find more tax avoidance after they change to the December year-end. Further analysis shows that the degree of December firms' peer pressure is positively associated with their level of tax avoidance. This result provides further support to our hypothesis that the aggressive tax behavior of those December firms is caused by their peer pressure.

Our study contributes to the literature by showing that fiscal year-end does matter to firms and can influence their behaviors. This may change the nearly idle state of the accounting literature about fiscal year-end.

LITERATURE BACKGROUND

The "Dark Side" of Competitive Pressure[1]

Shleifer (2004) discusses several situations in which competition destroys ethical behaviors. Here are two examples: (1) a company's reduction of taxes through corruption allows them to price its products at a lower level. As a result, its peers may have to follow suit to compete or survive. We think this may also explain the recent scandals that several large domestically law-abiding U.S. firms have become suspects of bribing officials in countries like China and Mexico, where local corruption has been a long-time issue and product-price competition is severe; and (2) competition for capital gives companies the incentive to report better-looking earnings to lower the cost of capital. Evidence can be found in the financial reporting behaviors of those IT firms during the IT bubble period.

In spite of the above intuition and examples, there are surprisingly scarce empirical studies that document the influence of competition on financial reporting and tax avoidance. There is a large stream of literature, theoretical research in particular, that studies firms' disclosure of information in certain kinds

of competitive markets. In these studies, earnings manipulation can be used to strategically deceive competitors and, as a result, influence their decisions such as production levels (see Darrough, 1993; Dye and Sridhar, 1995; Raith, 1996; Vives, 2006; Bagnoli and Watts, 2010; Beatty et al., 2013; etc.). In this stream of literature, a competitive product market (either in the form of monopoly or oligopoly) is just used as a model setting, and earnings management is simply one of the many possible ways to manipulate the information that will be disclosed to competitors. The direct empirical evidence about the association between the degree of competition and the extent of earnings management is provided in a working paper by Karuna et al. In their cross-industry study, earnings quality is worse when there is more competition (product substitutability, market size, and entry costs) within the industry. Two international studies look at the relation between competition and tax evasion. The study by Wang (2012) uses survey data and finds that firms with lower pricing power keep off more sales for tax purpose. While the results are interesting, we have two concerns regarding this study. First, pricing power largely captures firms' relative position in the market. Therefore, their results may simply suggest that firms having less competitive edge are more desperate and thus more willing to engage in tax evasion activities. Moreover, those firms usually come with lower profit margins. The fact that they underreport a larger amount of sales (their measure of tax avoidance) does not necessarily mean that they report less profit for tax purpose (profit = sales x profit margin). Therefore, the total tax evasion is not necessarily higher in those firms with weaker pricing power. Second, the tax question in the survey by World Bank is written as follows:

> *"Recognizing the difficulties many enterprises face in fully complying with taxes and regulations, what percentage of total sales would you estimate the* ***typical establishment*** *in your area of activity reports for tax purposes?"*

The tax evasion measure from this survey is simply a firm's belief of its peers' or competitors' evasion instead of its own, even though this firm may choose to follow their peers' avoidance levels. When all firms are pooled together for analysis with industry fixed effects controlled for, the above mismatch makes the true interpretation of their results rather difficult.

A study by Cai and Liu (2009) of Chinese firms' tax behaviors finds a positive relation between competition and tax avoidance. In addition, their results suggest that firms in a disadvantageous position within an industry avoid more taxes. This finding is in line with our concern with the results from Wang (2012): they may capture the relation between firms' positions in an industry and tax avoidance.

Our research differs from the above studies in three ways: First, no similar empirical evidence is found in the U.S. yet. Second, our fiscal-year end variable is intended to capture the peer pressure from financial reporting time instead of product market competition.[2] Third, compared with the competition variables used in the models of other studies, our simple December measure is less likely to be endogenous or reversely caused by tax avoidance.

December and Non-December Firms

In the U.S., firms can choose a fiscal year that is different from the calendar year. This is an important decision, since budgeting, operating cycle, financial reporting, as well as tax computation are all based on the selected fiscal period. More than 60% of U.S. firms choose December 31 as their fiscal year-ends. The rest place their fiscal year-ends at the end of the other eleven months, with March, June, and September being the most popular ones. Those choices suggest that most firms' operating cycles are aligned with the calendar year, or at least, calendar quarters. The research about firms' choice of fiscal year-end is extremely limited, partly because it is much agreed upon that firms choose it simply according to their business seasonality. Smith and Pourciau (1988) document that December firms are larger in size and have smaller systematic risks (beta) than non-December firms. Huberman (1989) again finds that December firms tend to be larger firms. Oyer (1998) shows the impact of firms' fiscal year-ends on their sales pattern: more sales are reported in their last fiscal quarter than the other three fiscal quarters. This is likely caused by the commission and bonus structures of sales staff and managers. The study by Sinha

and Fried (2008) is the first we are aware of that looks at fiscal year-end from the perspective of competition. In the stochastic model from this theoretical paper, they show that firms should consider deviating from competitors' fiscal year-ends to keep valuable information being transferred, although business seasonality is still the major consideration when firms choose fiscal year-end.

Kamp (2002) examines financial reporting worldwide and provides evidence that, in addition to seasonality, legislation is an important determinant of firms' choice of fiscal year-end. The recent study by Du and Zhang (2013) pays special attention to the so called "Orphan months", which are missing months in financial reporting due to firms' changes in fiscal year-ends. An interesting finding emerges from their study: firms tend to hide the loss or report lower income in those missing months, which, in turn, increases their chance of meeting targets in the following period.

Determinants of Corporate Tax Avoidance

The corporate tax avoidance research is young but growing fast. One challenge in this area is how to define tax avoidance? Researchers have different perceptions about this term. Here, we follow Hanlon and Heitzman (2012) and adopt the broad and general definition of tax avoidance, which is the reduction of explicit taxes.

When there is no separation between control and ownership, owners select the levels of avoidance activities that optimize the outcome, considering both the tax savings and the tax planning cost including potential penalties (Slemrod, 2004). It is more complicated when there is a separation between control and ownership and when agency problem comes into play. Phillips (2003) shows an intuitive finding based on survey data. When business-unit managers' compensations are based on after-tax income, lower effective tax rate (ETR) is obtained. However, Desai and Dharmapala (2006) find a negative relation between equity compensation and tax avoidance. The following explanation is offered by them: Managers may engage in tax sheltering activities for rents extraction. However, when their interests are aligned with shareholders' through high-powered equity incentives, the managerial diversion is reduced and so are tax-sheltering activities. Consistently, the study by Chen et al. (2010) shows that concentrated ownership, in the form of family firms, is associated with lower level of tax avoidance.

While the above studies look for determinants of tax avoidance from the inside of a firm, McGuire et al. (2012) studies one outside party's impact. Their results suggest that auditors' tax expertise reduces firms' tax liabilities.

HYPOTHESES

Compared with non-December firms, December firms have more peer pressure because of (1) their closeness in financial reporting time and (2) their operating competition due to the synchronized business cycles.

When companies report their financial statements together in the beginning of a year, investors can easily find benchmarks and for performance evaluation. Because their released annual reports cover the same calendar period, the excuses based on macro-economic environment are automatically precluded. From managers' perspective, to avoid ending up on the losing end in this December "fight", engaging in tax avoidance seems to be a better strategy than simply managing accruals for the following reason:

The easiness to find a benchmark of a December firm means that its abnormal accounting accruals are also easier to detect than a non-December firm's. Some may argue that it should also be easier for the market to detect December firms' tax avoidance than non-December firms'. While the literature has consistently shown that investors and banks penalize abnormal accruals, we do not have as much, or as consistent, evidence about their disapprovals of tax avoidance. For example, the study by Desai and Dharmapala (2009) finds no average association between book-tax difference (proxy for tax avoidance) and firm value. Theoretically, shareholders benefit from the tax savings. Therefore, even if the market can easily detect December firms' abnormal tax activities, the penalties may be less or none in comparison with those on accrual management. This makes the latter a less appealing tool for managers to deal with the December-imposed peer pressure.

Moreover, auditors' scrutiny over accruals can further constrain firms' ability to manage accounting numbers. Instead, based on the results from McGuire et al. (2012), auditors with tax expertise (measured as large market share) actually help to lower taxes through tax services.

Product competition can also arise among those December firms due to their synchronized business cycles. Here is one example: In the empirical work by Oyer (1998), firms display a pattern of sales according to their fiscal period instead of calendar period: they report more sales in the fourth fiscal quarter. Specifically, to increase sales in the fourth quarter, they can reduce product prices, offer lenient credit and other types of promotions. Assuming the demand is time-invariant, the surge in the supply of promotions among December firms at the same time point may push them to cut prices further or offer even more lenient credit terms.

As stated in Shleifer (2004), in a competitive market, firms may have to pursue unethical strategies in order to compete with their peers who have already resorted to those strategies and lowered their product prices. Of course, it is debatable about whether legally achieved tax avoidance is ethical or not.

We establish hypothesis 1 based on the above arguments:

> *H1. Firms with a December fiscal year-end are associated with more tax avoidance than firms with other fiscal year-ends.*

Another way we identify the December effect is by examining the changes in tax avoidance following firms' changes in their fiscal year-ends. This also helps us to exclude the potential biases introduced by unobserved firm characteristics that are related to both the fiscal year-end choice and tax avoidance. When firms change from a non-December to a December year-end, we expect the increased peer pressure pushes managers to learn and engage in more tax avoidance activities by following their peers.

However, when firms change from a December to a non-December year-end, do they experience a decrease in avoidance activities? We think this is unlikely. When firms have set up their tax shelters overseas or have mastered other avoidance techniques, it does not make economic sense for them to forgo those activities and pay more taxes. Therefore, we believe that there is an asymmetry in the December effect for the two types of changes. The following hypotheses are therefore proposed.

> *H2A. When firms change from a non-December to a December year-end, there is an increase in tax avoidance.*
> *H2B. When firms change from a December to a non-December year-end, there is no increase in tax avoidance.*

The hypothesized December effect comes from the clustering of competitors or peers. In the above hypotheses, we treat December firms as a single category that has higher peer pressure. A further issue is how the peer-pressure-induced tax avoidance varies among those December firms. If the clustering of peers leads to December firms' tax avoidance activities, we expect that the degree of clustering should be positively related to the extent of tax avoidance among December firms. In other words, the more December firms a specific industry has, the more tax avoidance its December firms display (H3). From another perspective, if H3 is supported, we can gain more confidence in the argument that the December effect identified in H1 is brought by the clustering of December firms.

> *H3: A December firm's tax avoidance level is positively associated with the degree of December-clustering in its specific industry.*

RESEARCH DESIGN

Measures of Tax Avoidance

We use the following five popular tax avoidance measures in the literature: ***Effective tax rate* (*ETR*)** is defined as *tax expense/* (*pre-tax book income– special items*). This measure is one of the most

frequently used measures in the literature. In the 2001 survey of corporate tax departments (Hollingsworth, 2002), the ETR is cited as a performance measure by 58% of respondents. ***Cash ETR*** (Dyreng et al. 2008) is computed as *cash tax paid/* (*pre-tax book income ─ special items*)**.** Different from *ETR*, *Cash ETR* excludes tax accruals, so it is affected by the temporary tax differences such as deferrals of tax liabilities. However, we do not think that December firms differ from non-December firms in their incentives to manipulate the deferral part. Those temporary differences do not change/boost GAAP income, which is what managers care when under peer pressure. As a result, we do not expect to see too much difference in our results using these two tax avoidance measures, despite their difference in capturing tax accruals. ***Book-tax differences (BTD)*** captures both permanent and temporary differences. Following McGuire et al. (2012), it is calculated as (*pre-tax income ─ taxable income*) scaled by beginning *total assets.* Because taxable income information is not directly available from the outside, we need to estimate it in the following process: If *federal tax expense* and *current foreign expense* information is available, we divide the sum by the top U.S. statutory tax rate to get taxable income. If information is missing for either one or both, we replace the sum by *tax expense ─* (*deferred tax expense + state tax expense + other tax expense*). The literature argues that it is permanent book-tax differences, instead of the temporary ones, that create the ideal shelters (Weisbach, 2002 and Shevlin, 2002), even though Hanlon and Heitzman (2010) advises caution with this notion since we do have evidence that both permanent and temporary book-tax differences can predict firms' shelter involvement (Wilson, 2009). In spite of that, we compute the ***Permanent BTD*** as *BTD ─ deferred taxes.* Since our *BTD* measure is scaled by *total assets*, we scale deferred taxes in the same way. Creating temporary tax differences does not increase reported GAAP earnings. So if peer pressure forces managers to focus on GAAP earnings, we do not think using *Permanent BTD* and *BTD* as avoidance measures yield different results in our analyses. Following Frank et al. (2009), we create our fifth avoidance measure ***discretionary permanent differences* (*DTAX*)**, which controls for non-discretionary items that are known to create permanent differences. The following cross-sectional estimation is run in each two-digit SIC industry in each fiscal year. The residuals from this regression constitute the *DTAX measure.*

$$\begin{aligned}\text{Permanent BTD} = \alpha_0 + \alpha_1 \text{intangiles} + \alpha_2 \text{income loss} + \alpha_3 \text{minority interest} + \alpha_4 \text{current state tax} + \\ \alpha_5 \Delta\text{net operating loss} + \alpha_6 \text{Permanent BTD}_{t-1} + \varepsilon \qquad (0)\end{aligned}$$

Different from Desai and Dharmapala (2006), the above estimation from Frank et al. (2009) does not include earnings management (accruals). However, this is not a concern to us, the variable *discretionary accruals* is controlled later in our full analysis model. We notice that one potential problem may arise from the above model-estimated *DTAX.* In the equation, lagged *Permanent BTD* is controlled for and as a result may hide the high level of *DTAX* for firms that have consistently avoided more taxes. This may become a serious problem in our analysis since more than 99% of the December firms in our sample keep using December as their fiscal year-ends throughout our sample period. As a result, using *DTAX* measure, our estimated results may be greatly attenuated, creating a strong measurement bias against supporting the hypothesis. Caution is advised when looking at our results related to this measure.

Multivariate Models

To test H1 we employ the following model:

$$\begin{aligned}\text{Taxavoid} = \beta_0 + \beta_1 \text{December} + \beta_2 \text{Opportunity} + \beta_3 \text{Size} + \beta_4 \text{ABACC} + \beta_5 \text{NOL} + \beta_6 \Delta\text{NOL} + \\ \beta_7 \text{EQINC} + \beta_8 \text{FI} + \beta_9 \text{R \& D} + \beta_{10} \text{LEV} + \beta_{11} \text{BTM} + \beta_{12} \text{PPE} + \beta_{13} \text{ROA} + \beta_{14} \text{Cash} \\ + \beta_{15} \text{DEP} + \beta_{16} \text{BIG4} + \text{industry-year fixed effects} + \varepsilon \qquad (1)\end{aligned}$$

The above model is borrowed from McGuire et al. (2012). *December,* our variable of interest, *is* the dummy variable that equals one when a firm's fiscal year-end is December 31. We expect the coefficient β_1 to be negative for *ETR* and *Cash-ETR* and positive for *BTD*, *Permanent BTD*, and *DTAX*. *Opportunity* is the market value of a firm relative to the total market value of firms in the industry-year (SIC 2 digits level). It controls for the extensive tax-planning opportunities of the large multinational companies. Firm

Size controlled for in the model is measured as the natural logarithm of a firm's market value. *ABACC*, firms' abnormal accruals, is controlled for to partial out the impact of aggressive financial reporting on tax avoidance. *NOL* is an indicator variable that is equal to one if there is positive tax loss carry forward balance at the end of the firm-year. Δ*NOL* is the change in the amount of *loss carry forward*. We replace the value of this variable with zero if *tax loss carry forward* is missing. *ROA* is defined as *income before extraordinary items* divided by the average total assets for each firm-year. *Foreign operation income* (*FI*), *leverage* (*LEV*), *capital intensity* (*PPE*), *growth opportunities* (BTM), and *income related to the equity method* (*EQINC*), *research and development (R&D),* and *depreciation expense (DEP)* are used to control for economies of scale and firm complexity. *Cash* holding controls for firms' cash needs, which may be related to firms' tendency to defer taxes. The external auditor (BIG4) may play a role here in facilitating firms' tax avoidance and is included in the model as well. In addition, each industry-year (SIC 2 digits) is controlled in most of our models where indicated.

To test H2A and H2B, we use the same model (see Model 2) with the following changes: First, the sample used to test H2A consists of firms that have experienced changes from a non-December to a December fiscal year-end. The sample used to test H2B consists of firms that have experienced the opposite change. Second, since this is a within-firm analysis of tax avoidance, we control for firm fixed effects instead of industry-year fixed effects,.

To test H3 we employ the same model, but with a few changes (see Model 2). First, the sample is limited to all December firms. As a result, the *December* variable is excluded from the above model. We add in the variable of interest *Dec-concentration*, defined as the number of December firms in each specific-industry-year (SIC 4 digits). Here we use a more refined industry classification to better capture the industry-imposed peer pressure among the December firms. However, industry-years that have more firms are naturally have a larger number of December firms as well. To eliminate this bias due to industry size, we create the general *concentration* variable that is equal to the total number of firms within each specific-industry-year (SIC 4 digits). Then we add in Inverse Miller's ratio in the model to correct the potential observation selection bias (Heckman, 1979). *Invermills* is obtained from model (3), in which a group of variables are employed to predict firms' likelihood of choosing December instead of other months as their fiscal year-end. The additional two variables *Margin* and *Cycle* are from Model (3).

To support H2, β_1 needs to be negative for *ETR* and *Cash-ETR* and positive for *BTD*, *Permanent BTD*, and *DTAX*. To further strengthen our results, we also run our estimations in a comparison sample that consists of non-December firms. We expect that β_1 in the comparison sample to be either insignificant or at least smaller in magnitude than that in our December sample.

$$\begin{aligned}\text{Taxavoid} = {} & \beta_0 + \beta_1 \text{Dec-Concentration} + \beta_2 \text{Concentration} + \beta_3 \text{Invermills} + \beta_3 \text{Opportunity} + \beta_4 \text{Size} + \\ & \beta_4 \text{ABACC} + \beta_5 \text{NOL} + \beta_6 \Delta\text{NOL} + \beta_7 \text{EQINC} + \beta_8 \text{FI} + \beta_9 \text{R \& D} + \beta_{10} \text{LEV} + \beta_{11} \text{BTM} + \beta_{12} \text{PPE} + \\ & \beta_{13} \text{ROA} + \beta_{14} \text{Cash} + \beta_{15} \text{DEP} + \beta_{16} \text{BIG4} + \beta_{17} \textit{Margin} + \beta_{18} \text{Cycle} + \textit{fixed effects} + \varepsilon \qquad (2)^*\end{aligned}$$

**Run the model separately in two samples: December firms and non-December firms.*

The selection model tries to predict the choice of December with the following variables: (1) all of the financial variables from model (2); (2) *competition*, represented by firms' gross margin (1- *cost of goods sold* / *total sales*). This addition is for the following reason: To avoid product market competition, firms may desynchronize their business cycle with the majority of their competitors by ending their cycle in a non-December month; (3) *concentration*, the total number of firms in a specific-industry-year. This variable is also controlled for in model (2); (4) *length of operating cycle.* The major consideration in firms' choice of fiscal year-end is their' operation cycles. Although there is no direct information of the beginning and end of each firm's natural operating cycle, we compromise and control for the length of the cycle. This is measured as the sum of *the number of days in inventory* plus *the number of days in accounts receivables*.

$$\begin{aligned}\mathrm{PR}(\text{December}=1) = {} & \beta_0 + \beta_1\text{Margin} + \beta_2\text{Concentration} + \beta_3\text{Cycle} + \beta_4\text{Opportunity} + \beta_5\text{Size} + \beta_6\text{ABACC} \\ & + \beta_7\text{NOL} + \beta_8\Delta\text{NOL} + \beta_9\text{EQINC} + \beta_{10}\text{FI} + \beta_{11}\text{R \& D} + \beta_{12}\text{LEV} + \beta_{13}\text{BTM} + \\ & \beta_{14}\text{PPE} + \beta_{15}\text{ROA} + \beta_{16}\text{Cash} + \beta_{17}\text{DEP} + \beta_{18}\text{BIG4} + \beta_k \text{ fixed effects} + \varepsilon \end{aligned} \quad (3)$$

Our measure of December firms' concentration is on industry level. Because of it, to control for fixed effects in (2) and (3), we only include fiscal-year fixed effects without further controlling for industry level fixed effects. However, considering the fact that our concentration measure is on a more refined industry level (4-digit SIC), we still have a certain degree of freedom even if we control for the 2-digit SIC industry effects. For robustness purpose, we then run our estimations with 2-digit SIC industry dummies in both (2) and (3).

EMPIRICAL RESULTS

Summary Statistics

TABLE 1
SAMPLES (NUMBER OF OBSERVATIONS)

1. Sample period 1987-2012. Firm-years with assets-total available:	238,650
2. Firm-years with at least one tax avoidance measure available	124,683
3. Firm-years that are in non-regulatated industries	88,628
Firm-years with ETR	78,472
Firm-years with Cash-ETR	71,501
Firm-years with BTD	66,536
Firm-years with Permanent BTD	65,931
Firm-years with DTAX	65,916
Firm-years with ALL	50,973

Compustat starts to provide *income tax paid* (txpd) variable since 1987. Our sample period is from 1987 to 2012. We are able to obtain 238,650 observations when only *total assets* is required to be available (see Table 1). Then we require the firm-year observations to have at least one of the five tax avoidance measures available. This requirement reduces the sample to a total of 124,683 firm-year observations. It is pointed out by the literature that regulated industries have an extremely large portion of firms that have December fiscal year-end. Following the literature, we further exclude firms from those industries and retain 88,628 firms. Among those firms, *ETR* is the most available tax avoidance measure (78,472) while *DTAX* is the least available (65,916). Only 50,973 firms have all the five measures available. To avoid the potential sample selection bias, we keep all the 88,628 firm-year observations that have at least one avoidance measure available. Within this sample, we winsorize all variables at 1% at both ends and use the industry-year means to replace missing values of control variables in model (2).

Descriptive statistics about December firms, non-December firms, and the differences between the two groups are provided in Table 2. In the univariate analyses, Hypothsis 1 is strongly supported by all the five avoidance measures. *ETR* and *Cash ETR* are both shown to be lower in the December group, while *BTD, Permanent BTD,* and *DTAX* are all much higher in the December group. All the differences are strongly significant at 1% significance level. The magnitudes are large as well, except for *DTAX*. As mentioned earlier, this is likely the result of the model we use to predict *DTAX*: including lag *Permanent BTD* in the *DTAX* Model can greatly attenuate our results since December firms are extremely likely to stay December firms throughout our sample period.

We do not find significant difference between the two groups' discretionary accruals on an univariate level. Here we take an extra step and use the multivariate framework to test whether December firms

actually have higher discretionary accruals. Four simple financial variables are controlled: *size, BTM, leverage, and performance* (ROA). In addition, industry- year dummies are included. The results are reported in Table 3. We do find that December firms exceed non-December firms in *ABACC* by an amount that is equal to 0.62% of lagged *total assets*. The statistical significance is strong (<0.0001), despite the relatively small economical significance. However, if we consider the reversion of discretionary accruals, which may have cancelled a certain amount of the observed positive *ABACC*, the actual magnitude of earnings management, both upward and reversion in the next year, can be larger than our results suggest here. Nevertheless, the results indicate that peer pressure imposed by having a December fiscal year-end induces managers to engage in upward accrual management. From a different perspective, the relatively small magnitude in *ABACC* is actually consistent with our earlier discussion that, compared with non-December firms, December firms prefer tax avoidance over accrual earnings management when under December peer pressure. The reason is that market may find it easier to analyze December firms' discretionary accruals through horizontal comparison and then discount the inflated earnings. However, it is doubtful or, at least, unclear whether the market penalize tax avoidance in the same way.

TABLE 2
DESCRIPTIVE STATISTICS

VARIABLE	MEAN	P25	MEDIAN	P75	December (35,114)	Non-December (53,514)	Diff.	P Value
ETR	0.301	0.220	0.342	0.390	0.293	0.312	**-0.018**	**0.000**
Cash-ETR	0.244	0.085	0.236	0.358	0.235	0.258	**-0.024**	**0.000**
BTD	-0.075	-0.067	0.003	0.054	-0.011	-0.165	**0.154**	**0.000**
Permanent BTD	-0.074	-0.062	-0.002	0.035	-0.013	-0.160	**0.147**	**0.000**
DTAX	-0.001	-0.029	-0.006	0.011	0.000	-0.003	**0.003**	**0.003**
Financial Opacity	0.088	0.040	0.067	0.106	0.089	0.087	0.002	0.000
ABACC	-0.016	-0.073	-0.018	0.026	-0.016	-0.015	-0.001	0.304
Opportunity	0.449	0.034	0.291	0.998	0.443	0.459	-0.016	0.000
EQINC	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000
FI	0.011	0.000	0.000	0.003	0.012	0.009	0.002	0.000
SIZE	5.410	3.967	5.384	6.808	5.713	4.948	0.765	0.000
NOL	0.296	0.000	0.000	1.000	0.312	0.272	0.040	0.000
ΔNOL	-0.110	-0.060	-0.003	0.000	-0.054	-0.196	0.142	0.000
R&D	0.033	0.000	0.000	0.032	0.031	0.035	-0.004	0.000
LEV	0.183	0.006	0.130	0.290	0.196	0.163	0.033	0.000
BTM	0.596	0.305	0.483	0.748	0.585	0.612	-0.027	0.000
PPE	0.336	0.125	0.252	0.466	0.358	0.302	0.056	0.000
ROA	0.074	0.028	0.059	0.099	0.073	0.076	-0.003	0.000
CASH	0.204	0.026	0.089	0.252	0.205	0.202	0.003	0.227
DEP	0.052	0.030	0.045	0.065	0.053	0.050	0.003	0.000
Cycle (Days)	152.122	68.231	107.933	161.251	150.320	154.868	-4.548	0.048
BIG4	0.640	0.000	1.000	1.000	0.657	0.615	0.043	0.000
Cost/Price (=1-Gross Margin)	0.607	0.480	0.639	0.758	0.599	0.619	-0.020	0.000

The higher reported earnings will decrease the values of our measures *ETR* and *cash ETR* (since *net income* is the denominator) and increase the other three measures (since we subtract taxable income from reported *net income* to calculate BTD). As a result, without controlling *ABACC*, December firms' tax avoidance magnitude may be exaggerated in our estimation results.

In Figure 1, we present the distribution of our sample firms' fiscal year ends. There is a clear concentration in the month of December. There are three other much smaller clusters at the end of each calendar quarter: March, June, and September. If the higher tax avoidance of December firms is the result of peer pressure from firms' clustering, do those other three firm clusters, although much smaller in size, also create peer pressure that induces tax avoidance? If our hypothesis is right, we should observe more tax avoidance among them as well. The results are summarized in the rest five graphs (Figure 1), each for one specific avoidance measure. We do find evidence in support of this conjecture, with the only exception of *DTAX*. The levels of tax avoidance for March, June, and September firms are much smaller than that of December firms. This is consistent with the degree of concentration argument in our H2.

TABLE 3
OLS REGRESSION: ABNORMAL ACCRUALS ON DECEMBER DUMMY

VARIABLES	ABACC
December	***0.0062******
SIZE	-0.0075***
BTM	0.0059***
LEV	0.0527***
ROA	0.1106***
Constant	-0.0002
IndustryXFyear Dummies	YES
Observations	88,628
R-squared	0.071

Robust standard errors clustered by firm.*** p<0.01, ** p<0.05, * p<0.1

There is a large variation of tax avoidance across industries, so we further control each industry-year dummy and run OLS regressions to show the March, June, September, as well as December effects. Results are summarized in Table 4. In general, the December effect is the strongest, both statistically and economically. We also observe more tax avoidance in the other three clusters in general, albeit with less significance.

TABLE 4
OLS REGRESSION: TAX AVOIDANCE ON FOUR FISCAL YEAR-ENDS

	(1)	(2)	(3)	(4)	(5)
VARIABLES	ETR	Cash-ETR	BTD	Permanent-BTD	DTAX
December	-0.0132***	-0.0161***	0.1549***	0.1501***	0.0053***
March	-0.0129***	-0.0181***	0.0669**	0.0647**	0.0063**
June	-0.0045	-0.0139***	0.0351	0.0329	0.0002
September	-0.0001	0.0015	0.0487	0.0494	-0.0031
Constant	0.3097***	0.2558***	-0.1763***	-0.1720***	-0.0047***
Industry-year Dummies	YES	YES	YES	YES	YES
Observations	78,472	71,501	66,536	65,931	65,916
R-squared	0.081	0.081	0.070	0.070	0.067

Robust standard errors clustered by firm.*** p<0.01, ** p<0.05, * p<0.1

We notice that the March effect is the strongest among the three clusters. This is actually consistent with our time-based-peer-pressure argument in the sense that the March cluster only has a three-month distance to the large December cluster. As a result, March firms may also come under the peer pressure from their December neighbors. Some may argue that, if the distance theory applies, why there is no large

September effect. This is because the September cluster is three months before the December cluster. When investors receive the financial reports of those September firms and decide to compare them with December firms, they need to look back nine months at December firms' financials in a prior year (they cannot look forward since December firms' current year financials are not available yet). As a result, among the three clusters, September cluster has the longest distance to the December cluster. Consistent with this analysis, the September effect is shown to be weakest.

Multivariate Analyses

Tax Avoidance of December Firms (H1)-Full Model Analysis

We run the OLS regressions on the full Model (2) and summarize the results in Table 5. In support of H1, December firms consistently show higher levels of tax avoidance than non-December firms. As expected, the coefficient before *December* is very similar in (1) *ETR* and (2) *cash ETR*. The little difference is due to the fact that December peer pressure pushes managers to focus on the reported GAAP earnings. Since deferrals of taxes do not change reported GAAP earnings, we do not think the December pressure makes managers engage in more or less tax deferrals. The direct impact of December year-end on tax rate is 1% of net income. When we use *BTD* and *Permanent BTD*, the magnitudes of December effects are respectively 0.62% and 0.72% of firms' *total assets*. To compare the results under BTD and ETR, one needs to consider that: (1) BTD is based on income while ETR is based on income tax. The latter is only about one third of the former in size; and (2) BTD is scaled by total assets while ETR is

TABLE 5
OLS REGRESSIONS: FULL MODEL ANALYSES

VARIABLES	ETR	Cash-ETR	BTD	Perm-BTD	DTAX
December	***-0.0109******	***-0.0102******	***0.0062******	***0.0072******	***0.0033******
Opportunity	0.0077***	0.0115***	0.0024	0.0011	-0.0056***
ABACC	-0.0462***	0.0347***	0.1255***	0.1813***	0.0470***
EQINC	-0.7961***	-0.7676***	0.7374***	0.4483*	-0.1724
FI	-0.0636*	0.0203	-0.1575***	-0.1759***	-0.0500**
SIZE	0.0106***	0.0127***	-0.0139***	-0.0125***	0.0027***
NOL	-0.0302***	-0.0544***	0.0229***	0.0269***	0.0077***
ΔNOL	-0.0157***	-0.0199***	1.0650***	1.0387***	0.0026
R&D	-0.2893***	-0.2603***	0.0566**	0.1949***	0.1009***
LEV	-0.0220***	-0.0720***	0.0560***	0.0712***	0.0379***
BTM	0.0147***	0.0204***	0.0052**	0.0117***	0.0192***
PPE	-0.0117*	-0.0793***	0.0188***	-0.0295***	-0.0097***
ROA	-0.0400***	-0.1893***	0.9020***	1.0607***	0.5093***
CASH	-0.0192***	-0.0334***	0.0505***	0.0555***	-0.0022
DEP	0.0540	0.2155***	0.1556***	0.2650***	0.0125
BIG4	0.0103***	0.0112***	-0.0081***	-0.0072***	0.0044***
Constant	0.2634***	0.2323***	0.0124	-0.0135	-0.0784***
Industry-year Dummies	YES	YES	YES	YES	YES
Observations	68,552	63,329	61,137	60,657	60,648
R-squared	0.143	0.150	0.950	0.944	0.183

Robust standard errors clustered by firm.*** p<0.01, ** p<0.05, * p<0.1

scaled by income. The latter is only about 1/20 of the former on average. Combining (1) and (2), we get a adjusting factor that is roughly equal to 6. After applying this adjusting factor, the magnitudes of our December effects under BTD measures are somehow much larger than those under ETR measures. Overall, we notice a significant drop in magnitude from our unitvariate analyses in Table 2 and 4.

Solution to the Potential Spurious Relationship

The coefficients before control variables are generally consistent with those reported by McGuire et al (2012).[3] The R^2 s in our analysis are marginally larger than theirs.

We control for industry-year dummies in the above full model to deal with the following concern: Firms' choice of fiscal year-end is largely based on their business type, while the average effective tax rate varies with business type. Without controlling for business type, the association between December year-end and tax avoidance in regression analyses may simply reflect the impact of business type on the two variables. We use the industry classifications provided by SIC codes to control for different business types. However, it is well known in the literature that firms within each 2-digits, 3-digits, or even 4-digits SIC code are not necessarily engaging in very similar business or competing with each other.

We use a passive approach to address this issue and show that the precision of industry classification does not pose a concern to our analyses: (1) we control for year dummies and SIC-2 dummies in our estimation and obtain the results. (2) we control for year dummies and SIC-4 dummies in our estimation and obtain the results. (3) we look at the difference between the results in (1) and (2). Even though SIC-4 is not a perfect classification of the underlying business type, it is still more precise than SIC-2. If we can show in (3) that the difference is very small, then we can make the conclusion that an increase in the precision of industry classification is not a matter of concern in our analysis of December effects to begin with.

The results are summarized in Table 6. First, even after controlling for the SIC-4 dummies, our results are still strong. Second, the differences are very small between the results under SIC-2 and SIC-4, indicating that it is not a problem even if there are some unobserved business characteristics our SIC classification does not perfectly capture.

TABLE 6
DECEMBER EFFECT UNDER SIC-2 & SIC-4

VARIABLES	SIC-2 ETR	SIC-4 ETR	SIC-2 Cash-ETR	SIC-4 Cash-ETR	SIC-2 BTD
December Effects	-0.0109***	-0.0105***	-0.0102***	-0.0094***	0.0063***
	(-5.365)	(-5.106)	(-4.103)	(-3.817)	(4.002)
Observations	68,552	68,552	63,329	63,329	61,137
R-squared	0.121	0.148	0.123	0.150	0.948
VARIABLES	SIC-4 BTD	SIC-2 Permanent BTD	SIC-4 Permanent BTD	SIC-2 DTAX	SIC-4 DTAX
December Effects	0.0061***	0.0078***	0.0076***	0.0028***	0.0025**
	(3.620)	(4.660)	(4.267)	(2.707)	(2.240)
Observations	61,137	60,657	60,657	60,648	60,648
R-squared	0.948	0.942	0.942	0.114	0.122

Robust t-statistics in parentheses; Robust standard errors clustered by firm.*** p<0.01, ** p<0.05, * p<0.1;
Control Variables: See Model (2)

Evidence from Firms' Changes of Fiscal Year-Ends (H2A&H2B)

As another way to test the December effect, we look at those firms that have experienced either changes of fiscal year-end to December or from December. Firms rarely change their fiscal year-ends. Table 7 summarizes the number of different types of those changes we are able to get from the sample. In total, we have 667 changes in our sample. The most common type of change is from other months to

December, and we have 391 observations of this type of change, among which 105 observations are changes from June to December. The second most popular case is from December to other months, and we have 147 observations of such a change.

We analyze all firm-year observations from those 538 firms (391 plus 147). The T-tests of the difference between the pre-change and the post-change periods are presented in Table 8. Consistent with H2A, we find that firms' *ETR* and *cash-ETR* decrease after changing their fiscal year-end to December while the *BTD*, *Permanent BTD*, and *DTAX* all experience increases after such a change. All changes, except for that in *DTAX*, are significant. Consistent with H2B, we do not see significant changes in tax behaviors after firms switch from a December year-end to other year-ends.

TABLE 7
FIRMS WITH CHANGES OF FISCAL YEAR-ENDS

	To M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	**M12**	TOTAL
From M1	0	0	1	2	0	0	0	0	0	0	0	**28**	31
M2	4	0	0	0	1	0	0	0	1	0	0	**23**	29
M3	0	2	0	4	1	3	1	1	1	0	0	**68**	81
M4	5	1	1	0	0	1	0	0	0	0	0	**11**	19
M5	1	0	2	0	0	2	0	0	1	0	1	**9**	16
M6	4	2	6	2	2	0	1	2	7	0	1	**105**	132
M7	7	2	2	0	0	7	0	0	0	1	0	**16**	35
M8	2	1	1	0	0	2	0	0	2	0	1	**25**	34
M9	0	0	5	2	0	6	1	2	0	2	0	**68**	86
M10	4	0	4	0	0	0	0	0	4	0	1	**18**	31
M11	1	2	0	0	1	0	0	0	2	0	0	**20**	26
M12	**28**	**5**	**27**	**9**	**5**	**26**	**3**	**3**	**32**	**8**	**1**	**0**	**147**
TOTAL	56	15	49	19	10	47	6	8	50	11	5	**391**	667

TABLE 8
ANALYSES OF TAX AVOIDANCE IN FIRMS WITH CHANGES IN FISCAL YEAR-ENDS

	Change to December			
	Non-Dec.	Dec.	Dec.─ NonDec.	P-value
ETR	0.304	0.289	**-0.014**	0.000
Cash ETR	0.234	0.223	**-0.011**	0.023
BTD	-0.152	-0.019	**0.132**	0.000
Perm BTD	-0.145	-0.020	**0.125**	0.000
DTAX	-0.002	0.003	0.005	0.143
	Change from December			
	Non-Dec.	Dec.	NonDec ─ Dec	P-value
ETR	0.297	0.288	0.009	0.167
Cash ETR	0.229	0.216	0.013	0.126
BTD	-0.001	-0.048	0.047	0.120
Perm BTD	-0.002	-0.046	0.044	0.134
DTAX	0.001	0.003	-0.002	0.700

Then we run multivariate analyses and control for firm fixed effects. Results are reported in Table 9. They provide strong support for H2A and H2B: While firms that change from a non-December year-end to a December one experience large increases in tax avoidance (decrease in taxes), the opposite change does not bring a similar decrease in tax avoidance (increase in taxes). The asymmetric December effect

suggests that firms do not easily forgo the tax shelters or tax avoidance activities they have already established.

TABLE 9
MULTIVARIATE ANALYSES: THE IMPACT OF CHANGE IN FISCAL YEAR-ENDS

VARIABLES	(1) ETR	(2) ETR	(3) Cash-ETR	(4) Cash-ETR	(5) BTD
To December	***-0.0231******		***-0.0269******		***0.0323******
From December		***-0.0117***		***0.0092***	
	(6) BTD	(7) Perm-BTD	(8) Perm-BTD	(9) DTAX	(10) DTAX
To December		***0.0375******		***0.0075****	
From December	***0.0161****		***0.0096***		***-0.0083***

Robust t-statistics in parentheses; Robust standard errors clustered by firm.*** p<0.01, ** p<0.05, * p<0.1

Does the Degree of Concentration Matter? (H3)

In this section, we analyze the association between the degree of concentration and tax avoidance. If the December effect in H1 and H2 come from the peer pressure, we expect that December firms that have more December peers (stronger peer pressure) should display larger magnitudes of tax avoidance than December firms that have less December peers (weaker peer pressure). We run Heckman (1979) two-stage estimations separately within two samples: December firms and non-December firms. We run the

TABLE 10
SELECTION MODEL

VARIABLES	(1) December	(2) December
Cost/Price(=1-Margin)	-0.2669***	-0.3081***
Cycle	-0.0393***	-0.0584***
Total Concentration	0.0268***	0.0109*
December Concentration	-0.1635***	-0.1371***
EQINC	12.4969***	6.3012***
FI	-0.1833	-0.8326***
SIZE	0.0867***	0.0939***
ABACC	0.1738***	0.3384***
NOL	0.0800***	0.0517***
ΔNOL	0.1208***	0.1197***
R&D	-0.7332***	-0.7068***
LEV	0.4753***	0.3458***
BTM	0.1174***	0.1234***
PPE	0.3465***	0.0991***
ROA	-0.1747**	-0.1689**
CASH	0.1903***	0.1811***
DEP	-0.2643	0.1467
BIG4	-0.0993***	-0.0624***
Fixed Effects	Year	Year-Industry
Constant	0.3839***	0.8443***
Area under ROC	64.85%	71.02%

*** p<0.01, ** p<0.05, * p<0.1

estimation in the first sample to find support for H3, while the estimation in the second sample is simply a comparative analysis. We want to see a positive association between December-firm-concentration and tax avoidance in the first group and none association in the comparison group. The number of December-industry-peers is calculated on SIC-4 level.

Results of first stage selection model are reported in Table 10. There are three new variables included in the selection model. *Cost to price* proxies for the product market price competition. The results suggest that firms under heavy price competition are more likely to choose a non-December fiscal year-end to avoid the competition. It is interesting to note that the longer the business *cycle*, the less likely firms choose December year-end. The total concentration of firms by industry-year (number of firms) is positively associated with the choice of December year-end. Based on the area under ROC of the two estimations, respectively 64.85% and 71.02%, the selection model is a fair test. The Inverse Miller's ratio is obtained from the estimations and plugged in the estimation in the next stage.

Second stage estimating results are reported in Table 11. Panel A applies year fixed effects and the IMR used here is from Table 10 Column (1), where only year fixed effects are applied as well. While Panel B applies industry-year fixed effects and the IMR used is from Table 10 Column (2), where industry-year fixed effects are applied as well. In both estimations, December firms' tax avoidance is positively associated with the degree of December firms' concentration in the 4-SIC industry-year. However, in our comparison group, we find that December firms' concentration does not have significant or consistent impact on non-December firms' tax avoidance. Those results from the comparison group provide further support for the validity of our research design to test H3.

The additional industry-level fixed effects are applied, and results are presented in Panel B. We notice that the coefficients, especially for ETR and BTD, do differ from those in Panel A to a certain extent, but the differences are still relatively small and not consistent in sign. As argued earlier, using this approach, we can demonstrate that more precision in industry classification does not bias our results to an unfavorable direction.

TABLE 11
DEGREE OF CONCENTRATION AND TAX AVOIDANCE

Panel A: Fiscal year fixed effects					
VARIABLES	(1) ETR	(2) ETR	(3) Cash-ETR	(4) Cash-ETR	(5) BTD
	Dec.	NonDec	**Dec.**	NonDec	**Dec.**
Concentration (Dec.)	-0.0108**	-0.0026	-0.0085	-0.0020	0.0168***
Concentration (Total)	0.0042	-0.0023	0.0008	-0.0055	-0.0151***
	(6) BTD	(7) Perm-BTD	(8) Perm-BTD	(9) DTAX	(10) DTAX
	NonDec	**Dec.**	NonDec	**Dec.**	**Dec.**
Concentration (Dec.)	0.0026	0.0147***	0.0048*	0.0015	-0.0014
Concentration (Total)	0.0002	-0.0112***	-0.0026	-0.0022	0.0026
Panel B: Industry-year fixed effects					
VARIABLES	(1) ETR	(2) ETR	(3) Cash-ETR	(4) Cash-ETR	(5) BTD
	Dec.	NonDec	**Dec.**	NonDec	**Dec.**
Concentration (Dec.)	-0.0135**	0.0011	-0.0081	0.0005	0.0106***
Concentration (Total)	0.0050	-0.0072	0.0008	-0.0116*	-0.0114***
	(6) BTD	(7) Perm-BTD	(8) Perm-BTD	(9) DTAX	(10) DTAX
	NonDec	**Dec.**	NonDec	**Dec.**	**Dec.**
Concentration (Dec.)	0.0012	0.0111***	0.0021	0.0020	-0.0012
Concentration (Total)	0.0027	-0.0095**	0.0007	-0.0023	0.0049*

Robust standard errors clustered by firm.*** p<0.01, ** p<0.05, * p<0.1

CONCLUSION

Using five frequently used tax avoidance measures in the literature and a large sample of firms from 1988 to 2012, we consistently find that firms with December year-ends display more tax avoidance than

other firms. The results are still extremely strong after controlling for firms' financial characteristics, discretionary accruals, and time-industry fixed effects. Using a more refined industry classification (SIC-4 instead of SIC-2) does not reduce the magnitude of the this December effect, suggesting that the effect is not dependent on industry-specific characteristics. We argue that this December effect is the result of peer pressure, created by the large number of December firms in almost all industries.

Results from our other analyses are consistent with the above argument. First, December firms have a higher level of discretionary accruals, indicating that those firms have more pressure to report better performance. Second, looking only at firms that have experienced changes from a non-December year-end to a December year-end, we find that their tax avoidance level is significantly higher in the December-year-end period. In a similar way, we look at the limited number of firms that have experienced the opposite change, from December to non-December year-end, and we do not find a drop in tax avoidance. This suggests that firms that are released from their December peer pressure are unlikely to forgo those tax shelters and avoidance techniques that have been established and acquired back in the peer-pressure period.

To further show that the results are driven by the peer pressure instead of other December-related unobserved factors, we show that December firms' tax avoidance levels increase with the degree of December peer pressure calculated for each SIC-4 industry. In comparison, non-December firms' tax avoidance is not affected by the degree of December peer pressure.

We see our study contribute to at least two distinct streams of accounting literature. First, we revisit the decades' old topic of fiscal year-end selection but from a completely new angle: the potential peer pressure created by the majority of firms that end their fiscal years on December 31. The results in our study may invite more research on this topic that is almost idle in the literature. By contrast, tax avoidance, the second stream of literature that we contribute to, has been receiving growing attention in both accounting and finance literature lately. We provide a significant, but extremely simple and directly observable, determinant of tax avoidance.

ENDNOTES

1. This is the title from Cummins and Nyman (2005). In that paper, they develop a model that shows competitive pressure may force firms to make inefficient decisions so as to cater to customers' beliefs, even though they are better informed than their customers.
2. However, as argued earlier, when their business cycles are aligned due to the same fiscal year-end, December firms may compete with each other in product market and other areas.
3. Their sample size is much smaller (8,025 observations in the period 2002-2009)

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Acknowledgement

We appreciate the suggestions Willam Ciconte (University of Florida) has offered as the discussant of this paper in AAA 2014 Atlanta annual meeting. We also appreciate the help Dr. Wenwen Chien (College of Old Westbury) has provided. We acknowledge the research support from Dr. Patrick O'Sullivan and Anthony Barbera at Old Westbury.

APPENDIX

FIGURE 1
DISTRIBUTION OF FISCAL YEAR-ENDS (UPPER LEFT)
& TAX AVOIDANCE BY FISCAL YEAR-ENDS (THE REST FIVE)