Firm Age, Sales Growth, and Tax Aggressiveness:

Focus on small and medium enterprises

Ⅰ. Introduction

This research investigates the relationship between firm age and tax aggressiveness[1] and examines the association between firm growth and tax aggressiveness.

Companies maximize firm value and exert effort to grow consistently. Although certain firms do not grow their sales or assets continuously after its foundation, most companies increase their sales and assets consistently and position themselves in a stable status. As a firm ages and grows, its expense ratio grows exponentially larger than its sales ratio, the profit ratio will also increase considerably due to the rapid growth rate. Therefore, the taxable income, which is calculated by adjusting tax categories based upon the income in the financial report income, will also increase, consequently resulting in higher tax costs for growing companies. A company tends to maximize its firm value by minimizing net cash outflow. However, older firms who often enjoy a more stable position in the market may have higher tendency to abandon its aggressive tax strategy, even considering the influence on firms that choose aggressive tax planning and despite incurring higher tax cost.

Generally, firm growth tends to decrease as it ages (Evans, 1987; Yasuda, 2005). In the early stages of a firm's foundation, the firm may exert efforts to improve sales and increase its market share through energetic marketing activities. However, sales and profit increase rate generally slow down as the firm ages. If the firm's growth diminishes, its financial and taxable incomes also experience a decreasing trend. Tax cost decreases along with corporate size and thus, a firm's aggressive tax strategies might be reduced as the firm ages and its growth rate decreases.

This study examines firms listed with the Korean Securities Dealers Automated Quotations

[1] Many prior studies (Hanlon and Heitzman, 2010; Slemrod, 2004; Shackelford and Shevlin, 2001) have defined "tax aggressiveness" as pursuing active strategies to reduce tax costs.

(KOSDAQ), which are mostly small and medium enterprises (SMEs),[2] from 1999 to 2011. Tax aggressiveness of SMEs tends to be more sensitive than that of other companies because they are relatively small and tend to be financially unstable (Na et al., 2014). As a proxy for firm age, we adapted natural log to determine the gap between a firm's foundation year and the present year. The proxy of firm growth is the change ratio of sales of this year to those of last year.

The results show a significantly negative (-) relation between firm age and tax aggressiveness. This finding means older and more stable firms tend not to take risks to save on tax expenditure, namely, net cash outflow. The company manger always has to consider both tax and non-tax costs despite increase of the absolute tax cost along with the firm's size growth and ageing. In other words, older firms who have a very stable position are unlikely to select aggressive tax strategies because they consider maintaining a positive image or reputation more important than saving tax expense. The second result reported a significantly positive (+) relationship between firm growth and tax aggressiveness. This implies that as growth of a firm slows down as the firm ages, relative tax cost also decreases to firm size even with the increase in sales and profit rates. Hence, the firm may not pursue aggressive tax strategies. On the contrary, if the growth increases along with tax cost, SMEs without a relatively sound financial structure (unlike big companies) will pursue more aggressive tax strategies to alleviate its tax burden.

This study has the following contributions. First, this paper analyzes the pattern of tax aggressiveness of SMEs as the change of a firm age. This approach means firm age is utilized as an indicator that predicts the level of tax aggressiveness of a firm. Second, this study analyzes interrelationship between firm growth and tax aggressiveness along with firm age and business surroundings, and reports consistent results. These implications will provide useful information across various fields.

Ⅱ. Related research and hypothesis development

[2] SMEs are categorized into firms pursuing profit (including personal business entities), non-profit corporation, organization, unions (except for business organization without corporate personality), and firms that fit the principle of industrial three-year average sales amount. Their total assets should be below 500 billion won and they should not be in a mutual investment prohibited company group (Small and Medium Business Administration, http://www.smba.go.kr).

SMEs can suffer the same fate when pursuing aggressive tax strategies to save on tax expenses, because this behavior could jeopardize important events such as listing themselves in the stock market or increasing their capital by issuing new shares (Na et al., 2014). Choi and Lee (2014) report that the lower the degree of a firm's tax avoidance, the higher their reputations climb. This observation implies that aggressive tax strategy behavior can negatively influence a firm's reputation. Conglomerates place great importance on their image or reputation, and thus, compared with non-conglomerate firms, their tax avoidance degree is relatively low (Jung et al., 2009). Therefore, we believe that older SMEs might rationalize their behavior for the same reason given that their image or reputation is more important than reducing tax cost. Older SMEs with a more stable status are also unlikely to pursue aggressive tax strategies because the supposed "benefit" (i.e., to diminish tax cost) is much smaller than the "cost" (i.e., to earn a negative image). Therefore, we draw the following hypothesis:

Hypothesis 1: A firm's tax aggressiveness will decrease as the firm ages.

We anticipate that a firm's growth will decrease as the firm ages. According to Evans (1987) and Yasuda (2005), firm age and firm growth exhibit a significantly negative (-) relationship. Generally, a firm will display high growth in its early stage, but its growth decreases when it has acquired a certain amount of market share and becomes stable. A decrease in a firm's growth slows down sales and the increase in profit rate, which will result in a decrease in the level of relative tax cost. Therefore, we expect that firms may tend not to pursue aggressive tax strategies because the tax burden has relatively decreased. On the contrary, increase in a firm's growth causes an increase profit rate, along with increase in sales, unless expenses also rise excessively. In this case, taxable income, which is computed by adjusting tax adjustment categories based on the profits appearing on the firm's financial sheet, also increases. This condition will entice the firm to select an aggressive tax strategy because of its awareness that tax levied on a growing firm increases. Specifically, SMEs with unstable financial status are more likely to pursue aggressive tax strategy. Hence, we draw the following hypothesis:

Hypothesis 2: A firm's tax aggressiveness will decrease as the firm's growth decreases.

III. Research model and Sample selection

3.1 Research model

We use two multiple measures for tax aggressiveness. According to Hanlon and Heitzman (2010), using various measures when calculating tax aggressiveness of a firm yields better results than when using only one measure. Chen et al. (2010) and Dyreng et al. (2010) also used multiple measures to calculate the degree of tax avoidance and drew their conclusions.

One of the tax aggressiveness measures used in our study is *TaxAgg*, following the method used by Jeon and Kim (2008). Other tax aggressiveness measures include *TaxAgg_D*, which follows the method used by Desai and Dharmapala (2006).

The measures of tax aggressiveness (*TaxAgg* and *TaxAgg_D*) are applied in our empirical models to test Hypothesis 1 and 2.

Equation (4) is the model employed to test Hypothesis 1:

$$\begin{aligned} TaxAgg_t(TaxAgg_D_t) = {} & \alpha_0 + \beta_1 AGE_t + \beta_2 Size_{t-1} + \beta_3 LEV_{t-1} + \beta_4 CFO_t + \beta_5 PPE_{t-1} \\ & + \beta_6 LARGEST_t + \beta_7 FOREIGN_t + \beta_8 INSTITUTE_t + \beta_9 LOSS_t \\ & + \beta_{10} Big_{t-1} + \beta_{11} Industry + \beta_{12} Year + \epsilon_t \qquad Eq(4) \end{aligned}$$

We use *TaxAgg and TaxAgg_D*, the multiple-variable tax aggressiveness, as dependent variables in analyzing the relationship between firm age and tax aggressiveness. We also use *AGE* as independent variable. In this study, we adapt the natural logarithm for the difference between foundation year and current year of the firm (Yasuda, 2005) to measure of firm age. If the coefficient value of *AGE* displays a significantly positive (+), it means tax aggressiveness increases as the firm ages. In contrast, when the value displays a significantly negative (-), it means that tax aggressiveness decreases as the firm ages.

Equation (5) is the model employed to test Hypothesis 2:

$$TaxAgg_t(TaxAgg_D_t) = \alpha_0 + \beta_1 GRW_t + \beta_2 Size_{t-1} + \beta_3 LEV_{t-1} + \beta_4 CFO_t + \beta_5 PPE_{t-1} + \beta_6 LARGEST_t + \beta_7 FOREIGN_t + \beta_8 INSTITUTE_t + \beta_9 LOSS_t + \beta_{10} Big_{t-1} + \beta_{11} Industry + \beta_{12} Year + \epsilon_t \qquad Eq(5)$$

Equation (5) is used to analyze the influence of firm growth on tax aggressiveness. The variable to measure the firm growth was sales growth rate (Brush and Bromiley, 2000; Jeong and Lim, 2010). If the coefficient value of *GRW* shows a significantly positive (+) result, and it means, tax aggressiveness is higher as the firm growth increases. If the sign shows significantly negative (-) result, it means that tax aggressiveness is lower as firm growth increases. Other control variables are similar to that in Hypothesis 1.

IV. Empirical results

4.1 Results for hypothesis 1

Table 2-1 presents the results of the analysis for Hypothesis 1, where *TaxAgg* is used as a variable for tax aggressiveness. The coefficient value of independent variable *AGE* shows -0.010 and is significantly negative (-) at the 1% level. The result of hypothesis 1 suggests that the SMEs' tax aggressiveness decrease as the firm ages.

Increases in the sales and profit rates of SMEs induce the elevation of tax cost burden as the firm ages. Hence, managers may be motivated to pursue aggressive tax planning to save cash outflow, particularly when considering the business environment of SMEs. However, managers form decisions after considering both tax and non-tax costs (Scholes et al., 2009). We can interpret that stable SMEs with a long history are unlikely to pursue aggressive tax strategies. They consider non-tax costs, such as company's image, reputation, and financial report expense, appear to be more important than tax cost. Older and more stable companies do not experience financial difficulty, and tend not to pursue aggressive tax strategies.

Table 2-2 shows the analytical results for Hypothesis 1, when *TaxAgg_D* is used as a variable of tax aggressiveness. The coefficient value of independent variable *AGE* is negative (-) and -0.010 significantly at the 1% level. This result also supports Hypothesis 1. Both dependent variables (*TaxAgg and TaxAgg_D)* are represented as significantly negative (-) at

the 1% level and the relationship between firm growth and tax aggressiveness in Hypothesis 1 can be supported with more reliability (Hanlon and Heitzman, 2010).

In the Table 2-1, the coefficient value of control variable *SIZE* shows 0.004 and significantly positive (+) at the 10% level. However, Table 2-2 shows a different result: *SIZE* is insignificant with *TaxAgg_D*. Results obtained in previous studies have been inconsistent with regard to the relationship between firm size and tax aggressiveness. Several prior studies (Mills et al., 1998; Lisowsky, 2010; Lee and Yoon, 2011; Kim and Jung, 2006) show that larger companies pursue aggressive tax strategies because of their sufficient capital and superior manpower. Park and Hong (2009) report a negative (-) association between firm size and tax aggressiveness, firms tend to not select tax avoidance in consideration of the firm's reputation and its growth. Koh and Paik, (2010) reported that the relation between firm size and tax aggressiveness is insignificant; these inconsistent results might be a variety of reasons. Big companies can choose aggressive tax strategy because it possesses superior manpower related tax, so they can pursue aggressive tax planning with easy. Firms tend to not opt for aggressive tax strategies because they do not want to face risks from people in aggressive tax strategy.

<Table 2-1> the result for hypothesis 1 ($TaxAgg_t$)

(N=4,076)

Variable	*β*	*t-value*	*significance level*
Intercept	-0.082	-1.169	
AGEt	-0.010	-3.574	***
SIZEt-1	0.004	1.827	*
LEVt-1	-0.096	-10.852	***
CFOt	0.320	28.574	***
PPEt-1	0.012	1.601	
LARGESTt	0.007	0.794	
FOREIGNt	-0.016	-0.968	
INSTITUTEt	0.039	0.889	

LOSSt	-0.000	-0.174	
BIGt-1	0.004	1.535	
Industry	*Included*		
Year	*Included*		
Fvalue	23.677		***
Adj_Rsq	23.106		

4.2 Results for Hypothesis 2

Table 3-1 shows the empirical results for Hypothesis 2 when *TaxAgg_D* is the variable of tax aggressiveness. The coefficient value of independent variable *GRW* is positive (+) and 0.016 significant at the 1% level. This result can be interpreted in two ways. First, an increase in firm growth will result in an increase in sales, thereby increasing financial income, as long as no excessive expenditure is incurred. Therefore, taxable income increases as well, unless an unexpectedly large negative (-) tax adjustment occurred. The implication is that increased profits results in additional tax cost burden for the company (Srinivasan, 1973; Rice, 1992). Therefore, a firm's tax aggressiveness increases as the company obtains a higher sales growth rate. SMEs, which exhibit relatively high growth rate, will display this tendency. Second, a firm's growth is likely to decrease as the firm ages (Evans, 1987; Yasuda, 2005). Thus, firm growth decreases with age; a firm's tax cost will diminish relative to its size, and the company's tax aggressiveness will decrease.

Table 3-2 shows the analysis result of Hypothesis 2 when the tax aggressiveness variable is *TaxAgg_D*. The coefficient value of the independent variable *GRW* is 0.017, displaying a positive (+) value that is significant at the 1% level. This finding is the equivalent result of Table 3-1.

The results of Tables 2-1, 2-2, 3-1, and 3-2, after testing Hypotheses 1 and 2 in relation to tax aggressiveness measures are consistent. Therefore, the empirical results of our study exhibit robustness. In addition, control variables exhibit almost consistent results in Table 2-1, 2-2, 3-1, and 3-2.

<Table 3-1> the result for hypothesis 2 ($TaxAgg_t$)

(N=4,076)

Variable	*β*	*t-value*	*significance level*
Intercept	-0.101	-1.261	
GRWt	0.016	3.905	***
SIZEt-1	0.003	1.484	
LEVt-1	-0.069	-6.711	***
CFOt	0.303	21.477	***
PPEt-1	0.012	1.316	
LARGESTt	0.002	0.234	
FOREIGNt	-0.021	-1.108	
INSTITUTEt	-0.021	-0.387	
LOSSt	-0.032	-6.345	***
BIGt-1	0.003	1.151	
Industry	*Included*		
Year	*Included*		
Fvalue	16.944		***
Adj_Rsq	22.099		

Ⅴ. Conclusion

This study investigates the relationship between firm age and tax aggressiveness of SMEs, as well as the association between growth and tax aggressiveness of SMEs.

Some firms may disappear during the course of their business, although most companies continue to grow. Firms with long life acquire a stable status in the industry because they survived through the cutthroat competition. As firms grow older, their sales and assets may also increase.

Most of the KOSPI-listed companies might be stable because they are older and relatively larger than. By contrast, KOSDAQ-listed companies might consist of younger and smaller

firms (i.e., they might have unstable financial structure) firms because they are mostly SMEs or developing companies.

As the companies age, they exhibit growth and increased profit and sales rates, if there are not excessive increases in expenditures. In other words, financial income is expected to increase, thereby increasing taxable income with firm age. This means that tax cost can also increase as the firm ages. In general, SMEs consist of relatively small firms that exhibit high growth rate. As such, SMEs are likely to suffer from very large tax costs. Therefore, SME managers may be tempted to pursue aggressive tax strategies to reduce the said cost. Older and more stable firms are unlikely to pursue aggressive tax strategies because they may consider non-tax costs (e.g., their reputation or image) to be more important than tax cost.

Evans (1987) and Yasuda (2005) report that firm age and firm growth has a negative (-) relation. We expect the growth of SMEs to decrease due to a slowdown in the increase in sales and profit rates. If the firm's growth decreases, then the financial and taxable incomes also shrink, and the tax cost of the company will decrease relatively. Therefore, the company's aggressive tax strategy will diminish as it ages and its growth rate decreases.

Our study analyzed the changes in the levels of tax aggressiveness of KOSDAQ-listed companies from 1999 to 2011 and considered firm age and growth. The use of said companies is justified by the nature of the companies; SMEs are relatively small and have unstable financial structure (Na et al., 2014). We conjecture that tax aggressiveness of SMES might become increasingly sensitive as the firm ages or grows.

The research results show that the relation between age and tax aggressiveness of SMEs is significant and negative (-), thereby providing support for the hypothesis that tax aggressiveness weakens as a firm ages. Tax cost level increases along with the increase in firm size and age, such that the firm may be enticed to pursue aggressive tax strategies. Managers of older and more stable firms decide on both tax and non-tax costs, and they consider maintaining a positive image or reputation more important than saving on tax cost. Therefore, old and stable firms may not pursue aggressive tax strategies.

The association between SME growth and tax aggressiveness is significantly positive (+). This result supports the hypothesis that tax aggressiveness increases with the increase in firm growth. Firm growth gradually decreases as SMEs age, consequently tax cost decreases in relation to its size as sales and profit rates diminish. Hence, older firms with lower growth

rate are unlikely to pursue aggressive tax strategies.

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