

The Study On The Effect And Determinants Of Small - And Medium-Sized Entities Conducting Tax Avoidance

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ABSTRACT

SME often lack the capacity to keep transparency in management due to a small number of information users. Thus, the adoption of K-IFRS can be burdensome to numerous SME, which led to the enactment of Accounting Standards for Small- and Medium-sized Entities (AS-SME). AS-SME allows the accountants to easily implement accounting rules when writing financial statements and the users to comprehend useful information.

SME hold less tax burden since they receive a tax deduction and exemption from the Tax Act. Thus, we conjecture that the financial determinants of tax avoidance between SME and non-SME will differ. We divide the total sample according to the corporate tax avoidance and empirically examine whether the difference actually exists.

Our sample consists 18,954 audited firms including those external audited from 2011 to 2013. This study implements BTD, the difference between accounting profit and taxable income and estimated corporate tax avoidance (TS), which is the part that cannot be explained by total accruals in BTD to proxy for tax avoidance. (Desai and Dharmapala 2006).

We summarize our findings as below: there is a significant distinction between SME and non-SME regarding the related financial determinants. The result shows that firm size (SIZE), profitability (ROA), leverage (LEV), operating cash flow(CFO), capital intensity (PPE), R&D intensity (RNDS), and growth rate (GS) all influence the corporate tax avoidance of SME. Our result also suggests that there is variation in the determinants among the SME with high corporate tax avoidance.

The attempt to investigate the financial determinants of the tax avoidance in SME can be a barometer of the effectiveness of AS-SME, which is enacted to lessen the tax burden of the SME. We intend to provide policy implication regarding SME subsidy by examining the motive for corporate tax avoidance in SME.

Keywords: SME; Tax Avoidance; Financial Determinants; BTD; TS

1. INTRODUCTION

*A*ccounting enables numerous information users to make rational decisions by providing the useful information and is considered to be substantial in internationalizing and diversifying financial economy. The Korean financial market, as an attempt to enhance accounting transparency and establish East Asia financial hub mandated Korean International Financial Reporting Statements (K-IFRS) instead of Korean Generally Accepted Accounting Principal (K-GAAP) to all listed firms and financial institutions from 2011. Adopting K-IFRS led to both improving international credibility and stimulating the financial market. Firms with a relatively small number of information users mostly lack accounting capacity and even hold no obligation for external audit. Accounting Standards for Small- and Medium-sized Entities, (AS-SME) is legislated for these firms for the accountant to easily understand the accounting rules when making financial statements and to provide useful information to information users' decision making from 2014. Following the enactment of AS-SME, we expect that

such different accounting standards¹ following business surroundings can influence financial determinants and corporate tax avoidance among SME.

Effective tax rates (ETR) is generally adopted to proxy for corporate tax avoidance. It provides information about the tax burden of a firm and influence of tax on business. We use both book-tax gap (BTG) which is the difference between accounting profit and taxable income and TS, the estimated corporate tax avoidance proposed in Desai and Dharmapala (2006) to proxy for tax avoidance. Then we investigate numerous determinants that affect decision-making process relevant to finance, investment and operation activities.

Plethora of studies on tax avoidance focused on listed firms; however little attention was given to SME. Along with the K-IFRS adoption, the enactment of AS-SME has changed the accounting environment for SME. Following enactment of AS-SME, the significance of studies that underscore subsidizing SME increased. We conjecture SME have fewer motives for tax avoidance than non-SME for they are beneficiaries of the tax cut provisions and tax subsidy from SME aid policy. Moreover, unlike general listed firms, SME contain distinctive financial structure. Thus, we investigate financial determinants that influence SME's corporate tax avoidance.

Tax avoidance is defined as an ambiguous firm conduct that can either implicitly or explicitly diminish the tax burden of the firm. If the taxing authority determines the tax avoidance of the firm as tax evasion rather than tax saving, the firm is charged with direct tax including the originally imposed tax and the additional tax amount. Yet aside from direct tax expense, the firm confronts indirect tax burden which encompasses social condemnation and following stock price crash as well as sales decrease (Anderson & Frankle, 1980; Richardson & Welker, 2001; Dhaliwal, Li, Tsang & Yang, 2010; Andrews et al., 2019). As contradictory stances exist, the present study intends to find financial determinants of tax avoidance in SME and empirically explain the underlying motive of tax avoidance in SME. In the additional analysis, we find financial determinants that affect the involvement degree in tax avoidance among the SME.

The remainder of this article is structured as follows. In Section II, we describe the previous literature and the enactment of AS-SME. In Section III we present the hypotheses and research model, and in Section IV we present the empirical results of financial factors that explain corporate tax avoidance of SME. Concluding remarks encompassing summary and limitations are discussed in Section V.

2. LITERATURE REVIEW ON AS-SME AND TAX AVOIDANCE

2.1 AS-SME (Accounting Standards for Small- and Medium-sized Entities)

2.1.1 Background of AS-SME Enactment

The firms enlisted on the Korean financial market is mandated to report the financial statement following IFRS rather than K-GAAP from 2011 in an attempt to elevate accounting transparency and to establish East Asia's financial hub. Such radical changes in accounting environment alter the quality of accounting information and indirectly have an impact on the firm's information users, not to mention the firm's financing and investing activities. Since the firms are obligated to apply K-IFRS when writing their financial statement from 2011, the fiscal year also starts from 1st of January, 2011.

Due to the difficulty in adopting IFRS, there had been a continuous demand for the accounting standard for small SME, where the number of information users is relatively marginal and accounting capacity is in short. The requested standard should be easy to use for the accountant as well as provide useful information for decision making. Recent reform in enforcement decree of Commercial Act¹ allowed the Minister of Law to determine additional accounting standards for financial reporting with regards to firms not subjected to external auditing. Mainly focused on the transactions that take place in SME, AS-SME was enacted. AS-SME was simpler than K-

¹The Commercial Act Enforcement 15 (Accounting Principle) requires the Minister of Law to discuss with Financial and Service Commission and Small & Medium Business Administration then notify accounting standards for those public firms not subjected to 'Act on external audit' nor 'public institutions regulation'

GAAP and easier to adopt thereby reducing the adoption expense. some of AS-SME provisions differ from that of general accounting standards.

Table 1. Proportion of Firms by Size

Panel A. Firm Categorization by the Commercial Act					
Category	Stock Companies	LLC	Limited Partnership	Unlimited Partnership	Total
Number of firms	417,876	17,554	3,750	843	440,023
Percentage (%)	95.0	4.0	0.9	0.2	100.0

Panel B. Firm Categorization by Firm Size			
Category		Number of Firms	Percentage (%)
Firm Size	General Corporation	89,134	20.3
	Small and Medium Corporation	350,899	79.7
Total		440,023	100.0

Panel C. Listed and Unlisted Firm				
Listed Corporation		Unlisted External Auditing Corporation	Listed Corporation, Corporation Not Including Unlisted External Auditing Corporation	Total
Securities	KOSDAQ			
759	1,013	16,826	421,425	440,023
1,772				

Note: Corporation Statistical Yearbook (Fiscal Year 2010)

Table 1 demonstrates descriptive statistics regarding the number of corporations in the Korea financial market in the year 2010. Panel A displays that among corporations, stock company constitute the most, approximately 95%, limited liability corporation (LLC) accounts for 4%, and partnership for roughly 1%. Panel B categorizes total corporations into small and medium size and general corporation according to the firm asset. According to SME standard, a number of small and medium-sized firms is 350,889, which is 80% of the total corporations on December 2010. Among these SME, firms subjected to external auditing² numbers 18,589 and stock-listed corporation, 1,772. The number of firms categorized as SME is 421,425, which is 96% of the total firms and the rest including listed firms and firms subjected to external auditing accounts for 4%. As is seen in the numbers, even though the majority of corporations are SME, the Korean market concentrated on K-IFRS centered on listed firms. SME mostly have a relatively small number of information users and conduct simple transactions. Moreover, many SME firms are inept in accounting treatment. Thus, the necessity of adopting simple and clear accounting standards for SME has been raised.

2.1.2 Comparison of the Existing Accounting Standards

Accounting standards in Korea encompassing K-IFRS, K-GAAP, and AS for SME are tabulated in Table 2. The subjects of K-IFRS are the stock-listed corporation and financial institution. Those firms among the subject of external auditing not implementing K-IFRS are required to adopt K-GAAP. Ensuing the Commercial Act reform, firms not employing public enterprise accounting principle encompassing K-IFRS and K-GAAP can implement AS for SME. We summarize the type of corporations mandated and the law on which the obligation is based with regards to each accounting standard.

Table 2. Accounting Standards Categories

Category	K-IFRS	K-GAAP	AS-SME
Corporation under Obligation	Stock-listed corporation and financial institutions (excluding some institutions)	Corporations subjected to external auditing regulation not implementing K-IFRS	Firms adopting neither K-IFRS nor K-GAAP nor public enterprise accounting standards
Basis Law	Act on external audit Article 13 (1) 1 and article 7-2	Act on external audit Article 13 (1) 2	Commercial Act Article 446-2, (15) 3

Whereas the adoption of K-IFRS or K-GAAP in the listed firms and financial institutions can be less burdening, the implementing K-IFRS or K-GAAP can be a setback for SME due to overweighing workload and additional expense. Therefore, accounting standards for SME that are easy to understand and apply and that provide useful information to information users are in great need. The crux for AS for SME is establishing accounting standards that do not conflict with other acts and that meet the demand for easy usage and understanding of the accounting treatment. As Table 3 demonstrates, AS for SME adopts Commercial Act unlike K-GAAP and requires the statement of financial position and statement of revenue and expense as the main financial statement and additional statement of equity changes or statement of retained earnings. The rest of the information are recommended to be detailed in the footnote. Although it is customary to compare previous and the corresponding fiscal year when writing the financial statement, AS for SME only allows writing for the corresponding fiscal year.

Table 3. Comparison in Financial Statement

Category	K-GAAP	AS-SME	Commercial Act (Financial Statement of Corporation)	Corporate Taxation Law (Corporate Tax Addendum)
Basic Financial Statement	<ul style="list-style-type: none"> • Statement of Financial Position • Statement of Revenue and Expense • Statement of Changes in Equity • Cash Flow Statement • Footnote(Including Statement of Appropriation of Retained Earnings or Statement of Disposition of Deficit) 	<ul style="list-style-type: none"> • Balance Sheet • Statement of Revenue and Expense • Statement of Changes in Equity or Statement of Appropriation of Retained Earnings (Statement of Disposition of Deficit) 	<ul style="list-style-type: none"> • Balance Sheet • Statement of Revenue and Expense • Statement of Changes in Equity or Statement of Appropriation of Retained Earnings (Statement of Disposition of Deficit) 	<ul style="list-style-type: none"> • Statement of Financial Position • Statement of Comprehensive Income • Statement of Appropriation of Retained Earnings (Statement of Disposition of Deficit)
Etc.		Other footnotes are only recommendation	Corporations subjected to act on external audit are required to include cash flow statement and footnote according to Commercial Act	Corporate Taxation Law requires adopting the financial accounting standards. When submitting through Taxation Information and Communication Service, Balance Sheet and Statement of Revenue and Expense are required.

Note: Partial revision from AS for SME public draft

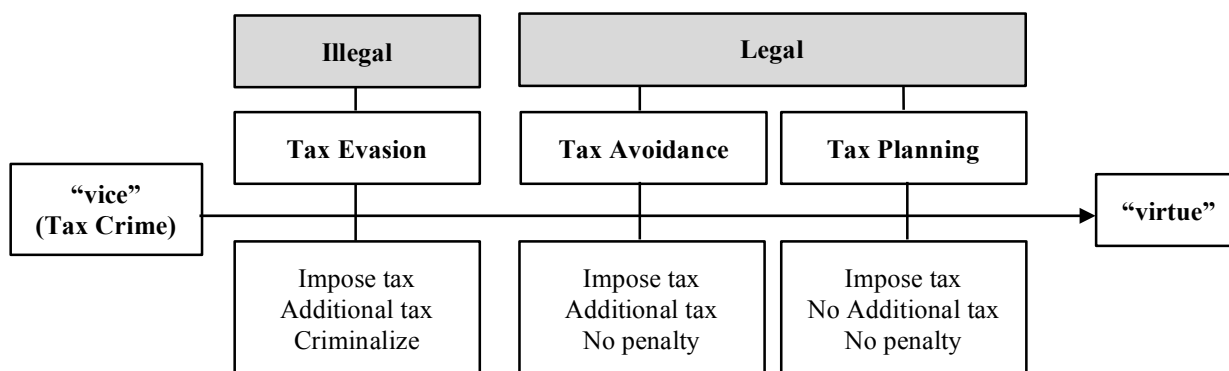
2.2 Literature Review

2.2.1 Definition of Tax Avoidance and Determinants

Many researchers have the different concept of tax avoidance (Hanlon and Heitzman, 2010). As seen in Figure 1, tax evasion is at the end of the spectrum when we visualize the categories of tax avoidance. Tax evasion is considered as violating Tax Act, which imposes the evaded tax and a fine. If the violation of Act is turn out to be deliberate, then the conduct can be called tax fraud and criminal punishment can be enforced. The other end of spectrum exhibits tax planning or tax saving, all of which are an act of tax reduction adhering for the intention of the government authority. Tax avoidance is placed in between tax reduction strategy and tax evasion. Simply put, tax avoidance refers to act of reducing tax not meeting the intention of the law yet those that do not directly violate the regulations. Since tax avoidance itself is not a violation of the law, it is not a subject for criminal punishment but is levied the tax unpaid when seen as inappropriate. It requires a vast amount of professional knowledge in a sense that it has to both be conducted within the brim of the law and avoid tax in an unintended way. Thus, the taxation professionals organize a thorough tax avoidance strategy.

Even though it is distinctive in concept, the boundary between tax avoidance and tax evasion is inconclusive in practice. A particular act can be equivocally determined as tax avoidance or socially accepted tax reduction strategy. Defining the same act may vary with time. For example, the taxation authority can claim a certain conduct as tax avoidance; on the other hand, the judicial branch of government can determine it as a tax reduction strategy. In such case, the taxation authority will be discontented and reform the Tax Act to define similar conduct as illegal in the long term. If the judicial branch of government refers to such act as not violating any article, yet socially unacceptable tax avoidance that distorts the intention of the law, then the taxation authority can justifiably impose the tax. When the decision of the judicial branch is divulged to the public, similar conducts will be identified as tax evasion, not tax avoidance.

Figure 1. Categorizing Tax Avoidance



2.2.2 Financial Determinants of Corporate Tax Avoidance and Research on SME Tax Avoidance

The extant literature on corporate tax avoidance from the early 1990s have examined tax burden according to the individual firm, industry and characteristics using effective tax rate. It has been found that effective tax rate differs according to the leverage, export ratio, capital intensity and technology investment besides the firm size (Kim & Ahn, 1994). By contrast, corporate tax avoidance is found to be positively related to effective tax rate, profitability, capital expense burden, and corporate structure. Additionally, it has been demonstrating negative relations with the tax incentive (Koh, 2006).

Kim and Ahn (1994) examined whether there exist a difference in corporate tax from the year 1989 to 1991 by running a regression of effective tax rate on various control variables including the firm size, leverage, export ratio, capital intensity, investment in technology. Their results showed an insignificant relation between corporate tax burden and firm size and significantly negative relation between the rest of the variables and corporate tax burden.

Numerous studies have been conducted using the estimates from Desai and Dharmapala (2006) from the year 2000. Koh (2006) suggested the corporate tax avoidance tends to display positive relation with tax burden (marginal tax rate), profitability, capital expense burden as well as ownership structure. At the same time displayed negative relation with tax incentives (TSE). The results suggest excessive tax burden can naturally entail motive for corporate tax avoidance.

Kim and Jung (2006) examined the influence financial factors have on corporate tax avoidance using the sample of enlisted firms with nonnegative estimated taxable income from the year 2000 to 2005. They implemented the measure from Desai and Dharmapala (2006) to proxy for corporate tax avoidance. They found corporate tax avoidance increased along with the total asset size and earnings before tax and decreased as liabilities increased. Their study held a limitation of estimating taxable income based on the tax paid.

Kim and Kim (2013) estimated corporate tax avoidance in long-term with an assumption that the impact of tax planning lasts in long-term. They used long-term corporate tax avoidance estimate from Hanlon and Heitzman (2010) including GAAP ETR, CASH ETR, CURRENT ETR, TAX ETR, and ETR Differential. They concluded that most firms not only avoid tax in short-term but also in long-term. Additionally, they also found that there are representative financial determinants that affect tax avoidance. Such determinants are firm size (SIZE), leverage (LEV), capital intensity (CAPIN), inventory rate (INVIN), R&D intensity (RNDIN), return on asset (ROA), export rate (FRGN), auditor size (BIG4), and auditing compensation (LNFEED).

Previous research on SME tax avoidance are as follows. Yoon and Bae (2001) conducted survey to the main accountants in SME to examine the factors that influence the corporate tax avoidance. Their results showed that tax burden and factors related to taxation administration both contain positive relation with tax avoidance. On the contrary, tax ethics and the factors that hinder corporate tax avoidance all demonstrated negative relation with tax avoidance. Thus, it is intuitive as the researchers have conjectured in the first place; the accountants tend to conduct less corporate tax avoidance when considering the sanctions yet they become more active when the tax burden is high. Whereas Yoon and Bae (2001) conducted an empirical research with a dataset from one country, Lee and Yoon (2011) engaged in cross-sectional research. They contrasted the difference in factors that influence corporate tax avoidance in both Korea and Indonesia. They found high tax rate entailed tax avoidance and complexity of the tax act and stronger sanctions on tax avoidance all reduced corporate tax avoidance. Furthermore, their study confirmed the pervasiveness of corporate tax avoidance in the market as well as unfairness in tax all entailed high corporate tax avoidance. They also enumerated the financial factors that have an impact on corporate tax avoidance including firm size, capital intensity, with a positive influence and profitability and the existence of tax investigation experience, with negative influence.

Cho, Park, and Lee (2011) also conducted the financial traits that prompt corporate tax avoidance from the year 2005 to 2009 with a sample of firms listed on KOSDAQ. They presented the positive relation between tax avoidance and tax burden besides firm size. On the other hand, tax incentive and capital intensity all held negative relation with tax avoidance. Thus, firms with either larger tax burden or large size are likely to conduct tax avoidance whereas the firms receiving benefits from tax incentives are less likely to conduct tax avoidance.

3. RESEARCH DESIGN

3.1 Hypotheses

3.1.1 Tax Avoidance and Financial Traits

This literature intends to find financial determinants that influence tax avoidance. We set our first hypothesis (H-1) about the relation between tax avoidance financial determinants including firm size (SIZE), leverage (LEV), profitability (ROA), operating cash flow (CFO), capital intensity (PPE), R&D intensity (RNDS), sales growth (GS), export rate (ES)

Firstly, firm size (SIZE) can possibly influence tax avoidance in two contradictory ways. According to political cost theory, larger and successful firms are likely to be the scapegoat being imposed more restraints and required wealth transfer due to higher visibility. (Zimmerman, 1983) Thus, we conjecture that larger firm size will entail higher tax avoidance tendency. On the other hand, according to political power theory where large firms can pressure the political process in their favor through taxation strategies thus attain more resource to organize the firm's operation for optimal tax savings, firm size is hypothesized to negatively affect tax avoidance tendency. Therefore, we establish a hypothesis (H 1-1) to confirm the relations between firm size and tax avoidance.

Secondly, the firm's financing and investment decisions can have an impact on tax avoidance since the tax provisions allow distinct accounting rules related to the firm capital structure and its decision on asset composition. (Stickney & McGee, 1982; Gupta & Newberry, 1997). Firms with higher leverage (LEV) can decrease the tax through the tax shield from the financial loss calculation of interest expense, so are likely to have less tendency to conduct tax avoidance; whereas firms with low leverage have more motive to conduct tax avoidance. We establish a hypothesis (H1-2) to test this.

Thirdly, it is plausible that since Tax Act endows tax incentives to stimulate firm investment, firm asset composition influence tax avoidance. (Stickney & McGee, 1982; Gupta & Newberry, 1997). Firms with depreciable assets have increased depreciation expense and can implement non-liability tax reduction effect through depreciation expense and tax exemption from an investment. Thus, higher capital intensity (PPE) may lead to lower tax avoidance tendency due to depreciation expense and tax exemption. Yet high capital intensity can increase depreciation expense and the firm can make attempts to manipulate by decreasing the useful life of the asset, choosing the depreciation method, categorizing the expenditure. This leads to a high possibility of committing tax avoidance. To capture such possibility, we come up with a hypothesis (H1-3).

Fourthly, profitability (ROA) through the firm's operation can influence tax avoidance. Since the tax is determined by the profit earned, the manager can commit tax avoidance when the firm's profit increases. Hypothesis (H1-4) is established to test this.

Both firm's operating cash flow and sales growth can affect tax avoidance tendency. The increase in the former can induce more tax burden to the firm thereby can positively influence tax avoidance tendency. Also, the sales growth which is calculated by subtracting current year sales from that of the previous year and dividing the previous year sales can influence tax avoidance. Hypotheses H1-5 and H1-6 capture the influence of operating cash flow and sales growth on tax avoidance, respectively.

Additionally, R&D intensity (RNDS) provides tax reduction related to investment in that it can instantaneously exempt expense whereas its benefit is typically realized over a long term. An additional amount in R&D also entails tax exemption from an investment. Thus, we conjecture firms with high R&D intensity are less likely to conduct tax avoidance if there are tax incentives related to R&D intensity. We include a hypothesis (H1-7) to investigate the possible negative relation between R&D intensity and tax avoidance.

Moreover, the government, in an attempt to promote exporting industry supports zero percent taxation when the transaction is considered to be export according to Value-Added Tax Act. So when tax incentive related to export exists, firms with high export rate have less incentive to conduct tax avoidance, indicating a negative relation between tax avoidance and export rate. This relation will be examined through hypothesis H1-8.

H1: Tax avoidance in SME is related to the firm's financial characteristics

- H1-1: Tax avoidance in SME is related to the firm size (SIZE)
- H1-2: Tax avoidance in SME is related to the firm leverage (LEV)
- H1-3: Tax avoidance in SME is related to the firm capital intensity (PPE)
- H1-4: Tax avoidance in SME is related to the firm total asset profitability (ROA)
- H1-5: Tax avoidance in SME is related to the firm operating cash flow (CFO)
- H1-6: Tax avoidance in SME is related to the firm sales growth (GS)
- H1-7: Tax avoidance in SME is related to the firm R&D intensity (RNDS)
- H1-8: Tax avoidance in SME is related to the firm export rate (ES)

3.1.2 Relation Between Tax Avoidance and Auditor Characteristics

Tax avoidance in SME can be influenced by auditor characteristics, specifically the auditor quality. We include auditor size and auditor findings to proxy for the auditor quality. The extant studies that adopted auditor size (BIG) as a proxy for the auditor quality categorized BIG4 which consists of large auditors and Non-BIG4 to investigate whether there is a difference in audit quality (Francis, 1984; Palmrose, 1989). Higher audit quality will be required to larger auditor size due to auditor reputation and image. It is plausible that difference in tax avoidance between SME that received proper audit findings (AD) and those that received otherwise. When relatively small SME receive proper audit findings, these firms have less motive for tax avoidance due to increased reliability in the financial statement. On the other hand, those that did not receive proper auditor's report are likely to commit tax avoidance. Thus, tax avoidance in SME may differ following the size of the auditor and the auditor's report, to capture the relations of which we set hypotheses H2-1 and H2-2, respectively.

H2: Tax avoidance in SME is related to auditor characteristics

- H2-1: Tax avoidance in SME is related to auditor size (BIG4)
- H2-2: Tax avoidance in SME is related to auditor findings (AD)

3.2 Variables Measurement and Modeling

3.2.1 Measuring Tax Avoidance

The present study estimates corporate tax avoidance using book-tax difference (henceforth BTD). BTD is incurred either through increasing earnings on the financial report (earnings manipulation) or through decreasing taxable income (tax avoidance). In some cases, firms use both means to maximize the firm value. Based on such reasons, we can implement BTD to proxy for corporate tax avoidance. Extant studies on tax avoidance using BTD also proved that the difference in BTD was related to the firms that committed tax avoidance.

Desai and Dharmapala (2006) introduced a new measurement to proxy for tax avoidance with an assumption that the difference between accounting profit and taxable income is attributable to earnings manipulation and tax avoidance. They calculated abnormal BTD (discretionary part) by regressing BTD on total accruals thereby ruling out normal BTD (non-discretionary part). This calculation controlled for the earnings manipulation part from total accruals. The recent research has adopted the estimation from Desai and Dharmapala (2006). Following the convention, the present study adopts the methodology in Desai and Dharmapala (2006) to estimate the corporate tax avoidance. Despite the difference in between the tax structure in the US and Korea, we adopt the measure from Desai & Dharmapala (2006) to accurately capture tax avoidance by eliminating the effect of earnings manipulation.

BTD is calculated by subtracting taxable income from accounting profit and dividing the result by total asset as shown in (Eq. 1). We present the measure proposed in Desai and Dharmapala (2006) as (Eq. 2). The residual variable of (Eq. 2) is the corporate tax avoidance (TS)

$$BTDi,t = \frac{(Accounting\ Income - Taxable\ Income)}{Total\ Asset} \tag{Eq. 1}$$

$$BTDi,t = \beta_1 TA_{i,t} + \varepsilon_{i,t}$$

$$TS_{i,t} = \varepsilon_{i,t} \tag{Eq. 2}$$

- BTDi,t = (earnings before tax-taxable income)/total asset of firm i in term t
- TAi,t = (net income-operating cash flow)/total asset of firm i in term t
- TSi,t = estimated corporate tax avoidance of firm i in term t

The dependent variable of (Eq. 2) is BTD and the independent variable is total accruals which is the difference between accounting profit and operating cash flow. The measure by Desai and Dharmapala (2006) has an advantage in that it can decrease measurement error by separating the earnings manipulation from BTD. In this vein, we regard total accruals as earnings manipulation proxy as it was identified in Desai and Dharmapala (2006).

3.2.2 Model

This literature investigates financial determinants that are associated with tax avoidance in SME. We use BTD and TS to proxy for tax avoidance and conduct a regression analysis as in (Eq. 3).

$$TS_{i,t}(BTDi,t) = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 ROA_{it} + \alpha_3 LEV_{it} + \alpha_4 CFO_{it} + \alpha_5 PPE_{it} + \alpha_6 RNDS_{it} + \alpha_7 GS_{it} + \alpha_8 ES_{it} + \alpha_9 AD_{it} + \alpha_{10} BIG4_{it} + YD + IND + \varepsilon_{i,t} \tag{Eq. 3}$$

BTD _{i,t}	=	(accounting profit-taxable income)/total asset
TS _{it}	=	estimated corporate tax avoidance proposed in Desai and Dharmapala (2006)
SIZE _{i,t}	=	logarithm of total asset
ROA _{i,t}	=	net income/total asset
LEV _{i,t}	=	total liabilities/total asset
CFO _{i,t}	=	operating cash flow/total asset
PPE _{i,t}	=	(tangible asset-land-asset under construction)/total asset,
RNDS _{i,t}	=	R&D/total sales
GS _{i,t}	=	(sales during current term-sales during previous term)/sales during previous term)
ES _{i,t}	=	sales from export/total sales
AD _{i,t}	=	1 if the auditor's report is unqualified, otherwise 0
BIG4 _{i,t}	=	1 if the auditor firm is BIG4, otherwise 0
YD	=	year dummy variable
IND	=	industry dummy variable
ε	=	Residual

The definitions of BTD and TS are introduced in the previous section. Here we enumerate the financial determinants that, we speculate to be, are related to BTD or TS. Firms with high profitability (ROA) are anticipated to be more active in tax avoidance. Firms with high leverage (LEV) might be relatively passive due to tax shield through interest expense. Firm size (SIZE) has an ambiguous effect on tax avoidance for it is plausible that the large firms are likely to plan competitive tax strategy, yet according to political cost theory, are likely to be less involved in tax avoidance. Since firms with high capital intensity (PPE) have various means to reduce tax, they are less likely to conduct tax avoidance.

Firms with greater operating cash flow may be more involved in tax avoidance (Koh, Kim & Choi, 2007; Koh & Park, 2011). R&D intensity, due to tax reduction and exemption clauses is conjecture to be negatively related to tax avoidance. If the firm has positive sales growth (SG) then it will be more active in tax avoidance to minimize cash outflow from the increased sales. Firms substantially relying on export (with high export rate (ES)) tend to hold less motive in tax avoidance. Firms with proper audit findings (AD) or those audited by the large auditors (BIG4) also have less motive for tax avoidance. We control for the annual and industrial difference through dummy variables.

3.3 Sample

The present study uses the sample data from 2011 to 2013 extracted from the firms listed on the Korea Stock Exchange including the firms subjected to external audit². We exclude those firms that meet the following criteria and finalize 18,754 firms as total sample data:

- in the financial industry or of which accounts close in other months than December
- with impaired capital or into administration
- where the data cannot be found

We illustrate the sample selection process. Firstly, we extract from Kis-value from 2011 to 2013 the listed firms and the subjects of external audit. Then we omit the firms in the financial industry from the sample since the financial statements of financial institutions are different from that of the manufacturing firms in the format and explanation. The majority of the listed firms close accounts during December. To keep the consistency in measurement and for the sake of convenience in interpreting the result, we remove the firms in the financial industry and firms with accounts closing period other than December, respectively. Thirdly, we intend to exclude the abnormal firms since their financial information can be considerably dissimilar to that of a normal firm. Lastly, we extract the financial data from Kis-value and remove some unavailable data. We identify the observations that exceed 1% distribution as the outlier, therefore, conduct 98% winsorization. Our final total sample comprises 18,754 firms.

² We extract from Kis-value from 2011 to 2013 the listed firms and the subjects of external audit. (<https://www.kisvalue.com/web/index.jsp>)

4. EMPIRICAL RESULT

4.1 Descriptive Statistics and Correlation Analysis

Table 4 summarizes the descriptive statistics of the total sample. In the total sample, the mean and median of BTD are 0.0132 and 0.0079, respectively and those of TS are 0.0004 and -0.0034. As seen in the statistics over SME, the distribution of TS is again skewed to the right. The standard deviation of BTD and TS are 0.0677 and 0.0647 among SME and 0.0682 and 0.0652 for the total sample. There is only a marginal difference in tax avoidance among firms.

Table 4. Descriptive Statistics (n=18,754)

Variable	Mean	SD	Min	25%	Median	75%	Max
SIZE	24.1878	1.1576	20.4027	23.4010	23.8868	24.6890	32.6733
LEV	0.1460	0.1704	0.0000	0.0242	0.0855	0.2059	1.0356
PPE	0.1984	0.1760	0.0000	0.0638	0.1543	0.2835	0.9859
RNDS	0.0116	0.0392	0.0000	0.0000	0.0000	0.0060	0.9836
CFO	0.0811	0.1009	-0.7656	0.0138	0.0640	0.1283	1.0144
ROA	0.0786	0.1043	-0.4972	0.0246	0.0587	0.1125	2.1327
GS	0.1217	0.4446	-0.9930	-0.0461	0.0593	0.1953	6.8556
ES	0.0000	0.1020	0.0000	0.0000	0.0000	0.0000	1.0000
AD	0.9400	0.2380	0.0000	1.0000	1.0000	1.0000	1.0000
BIG4	0.2200	0.4120	0.0000	0.0000	0.0000	0.0000	1.0000
BTD	0.0132	0.0682	-0.7495	-0.0085	0.0078	0.0326	0.8625
TS	0.0004	0.0652	-0.7797	-0.0221	-0.0034	0.0220	0.8397

Note: Explanation on Variables

BTD = (accounting profit-taxable income)/total asset, TS = estimated corporate tax avoidance proposed in Desai and Dharmapala (2006), SIZE = logarithm of total asset, ROA = net income/total asset, LEV = total liabilities/total asset, CFO = operating cash flow/total asset, PPE = (tangible asset-land-asset under construction)/total asset, RNDS = R&D/total sales, GS = (sales during current term-sales during previous term)/sales during previous term, ES = sales from export/total sales, AD = 1 if the auditor's report is unqualified, otherwise 0, BIG4 = 1 if the auditor firm is BIG4, otherwise 0.

Table 5 demonstrates Pearson correlation among main variables. The tabulated result exhibits a positive relation between TS and ROA, LEV, CFO, PPE, and RNDS whereas a negative relation between TS and SIZE. ES, and AD hold insignificant relation.

Table 5. Pearson Correlation among Main Variables

	SIZE	ROA	LEV	CFO	PPE	RNDS	ES	GS	AD	BIG4
TS	-.036***	.397***	.015*	.301***	.061***	.051***	-.009	.116***	-.001	.011
	.000	.000	.052	.000	.000	.000	.253	.000	.886	.161
SIZE	1	-.036***	-.073***	.048***	-.020**	-.001	.012	-.036***	-.007	.041**
		.000	.000	.000	.011	.887	.114	.000	.377	.000
ROA		1	-.211**	.411**	-.176**	-.034**	-.007	.225**	-.002	-.002
			.000	.000	.000	.000	.377	.000	.775	.792
LEV			1	-.129***	.425***	-.002	-.006	.049***	-.004	-.005
				.000	.000	.764	.467	.000	.630	.488
CFO				1	.050***	-.018**	-.024***	.088***	.001	.015
					.000	.023	.002	.000	.935	.053
PPE					1	-.036***	-.005	.031***	.000	.035***
						.000	.503	.000	.953	.000
RNDS						1	.006	-.023***	-.005	-.009
							.449	.004	.517	.265
ES							1	-.010	.009	.063***
								.181	.260	.000
GS								1	-.016**	-.004
									.040	.612
AD									1	.083***
										.000

4.2 Regression Analysis

We run our main regression model to find the significant financial traits and tabulate the results in Table 6. The results related to TS, one of the proxies for corporate tax avoidance, are as follows. Firm size (SIZE) holds significant and negative effect on corporate tax avoidance with a coefficient value of -3.300 . This implies that SME with smaller size is more likely to conduct corporate tax avoidance and also substantiates political power theory. As mentioned in the sections before, political power theory contends that large firms can establish favorable tax planning and contain more resource to structure firm activity for optimal tax reduction. Thus, it underpins that large firms hold less motive for corporate tax avoidance.

We also find that profitability (ROA), leverage (LEV), operating cash flow (CFO), capital intensity (PPE), R&D intensity (RNDS), and sales growth (GS) all have a positive impact on corporate tax avoidance, corroborating the previous studies. Higher profitability (ROA) naturally increases the management’s attempt to avoid tax by earnings smoothing. Operating cash flow (CFO) induces tax burden thus also holds positive relation with corporate tax avoidance. Firms with high leverage (LEV) are the beneficiary of interest tax shield thereby have less motive to avoid tax. However, ironically, firms subsidized with the tax deduction or exemption are more likely to avoid tax as they cannot reduce the tax from tax shield.

Furthermore, high capital intensity (PPE) entailing more discretion in determining depreciation expense leads to corporate tax avoidance. Generally, R&D intensity (RNDS) raise corporate tax avoidance due to the tax reduction means inherited in investment expense. Firms are likely to appropriate such tax incentives related to R&D investment. Sales growth also leads to corporate tax avoidance. On the contrary, the export ratio (ES), auditor’s report (AD) and auditor size (BIG4) all held insignificant relations with corporate tax avoidance.

Table 6. Regression Analysis Result

Variable	TAX Avoidance			
	TS		BTD	
	Coeff.	t(p-value)	Coeff.	t(p-value)
<i>Intercept</i>	-0.007	-0.701	0.015	1.496
<i>SIZE</i>	-0.001	-3.300^{***}	-0.001	-3.651^{***}
<i>ROA</i>	0.225	44.976^{***}	0.363	71.972^{***}
<i>LEV</i>	0.028	9.293^{***}	0.024	8.084^{***}
<i>CFO</i>	0.102	20.527^{***}	0.083	16.559^{***}
<i>PPE</i>	0.032	11.118^{***}	0.032	11.043^{***}
<i>RNDS</i>	0.117	10.145^{***}	0.111	9.578^{***}
<i>GS</i>	0.002	2.183^{**}	0.001	1.240
<i>ES</i>	-0.001	-0.330	-0.002	-0.462
<i>AD</i>	-0.000	-0.048	0.000	-0.242
<i>BIG4</i>	0.001	1.193	0.001	1.185
<i>YD</i>	Included		Included	
<i>IND</i>	Included		Included	
<i>N</i>	16,740		16,740	
<i>Adj. R²</i>	0.203		0.259	
<i>F-value</i>	426.836 (0.000) ^{***}		585.653 (0.000) ^{***}	

Note: 1. *, **, *** indicates 1%, 5%, 10% significance level, respectively.

2. Explanation on Variables

BTD = (accounting profit-taxable income)/total asset, TS = estimated corporate tax avoidance proposed in Desai and Dharmapala (2006), SIZE = logarithm of total asset, ROA = net income/total asset, LEV = total liabilities/total asset, CFO = operating cash flow/total asset, PPE = (tangible asset-land-asset under construction)/total asset, RNDS = R&D/total sales, GS = (sales during current term-sales during previous term)/sales during previous term, ES = sales from export/total sales, AD = 1 if the auditor's report is unqualified, otherwise 0, BIG4 = 1 if the auditor firm is BIG4, otherwise 0., YD = year dummy variable, IND = industry dummy variable.

We run an additional regression to examine the difference in financial attributes between high corporate tax avoidance group and low corporate tax avoidance group and tabulate the results in Table 7. There is a discrepancy between two groups in terms of financial characteristics. In the high corporate tax avoidance group, firms size (SIZE) has significant and positive effect on tax avoidance. This result is contradictory to what we observe in Table 6 and supports political cost theory. The theory claims that large and successful firms receive more attention thereby become a scapegoat of regulations and imposed more tax (Zimmerman, 1983). Based on such stance, large firms commit more tax avoidance. As Table 6 delineates, higher profitability (ROA) and R&D intensity induce the corporate tax avoidance. Both leverage (LEV) and sales growth (GS) lead to tax avoidance. As mentioned in the previous part, SME that receive tax reduction or exemption can benefit less from tax shield from interest thereby tend to avoid tax. On the other hand, firms with high capital intensity (PPE) show less tax avoidance.

The major difference between the results for low tax avoidance groups using TS as a proxy appears in a couple of financial traits. R&D intensity offers investment related tax incentives over a long period of time all of which can be exempted through expense. Thus, when the tax incentive related to R&D intensity exists, the firms with high R&D intensity are less likely to conduct tax avoidance. We conjecture sales growth (GS) to raise tax avoidance yet the result shows otherwise. The strong explanation for this phenomena is the effectiveness of the government tax subsidy, i.e., the tax reduction or exemption leads the firms with high sales growth not to avoid tax.

Table 7. Regression on high tax avoidance group and low tax avoidance group

Variable	TAX Avoidance							
	HIGH TS		LOW TS		HIGH BTD		LOW BTD	
	Coeff.	t(p-value)	Coeff.	t(p-value)	Coeff.	t(p-value)	Coeff.	t(p-value)
<i>Intercept</i>	-0.061	-4.312***	-0.087	-5.740***	-0.060	-4.190***	-0.098	-6.321***
<i>SIZE</i>	0.003	4.839***	0.001	1.697*	0.003	5.312***	0.002	3.254***
<i>ROA</i>	0.350	55.329***	0.069	9.712***	0.442	65.111***	0.142	18.243***
<i>LEV</i>	0.044	9.146***	0.016	3.435***	0.046	9.350***	0.009	1.886*
<i>CFO</i>	0.006	1.051	0.043	5.409***	0.076	11.034***	0.021	2.823***
<i>PPE</i>	-0.012	-2.884***	0.006	1.212	-0.010	-2.177**	0.014	3.011***
<i>RNDS</i>	0.090	5.839***	-0.140	-7.320***	0.089	5.558***	-0.172	-8.299***
<i>GS</i>	0.007	5.104***	-0.012	-7.076***	0.004	3.143***	-0.010	-5.922***
<i>ES</i>	-0.008	-1.217	-0.005	-0.687	-0.003	-0.501	-0.011	-1.511
<i>AD</i>	0.004	1.336	0.001	0.457	0.003	1.108	0.002	0.558
<i>BIG4</i>	0.002	1.476	0.001	0.513	0.002	1.358	-0.000	-0.010
<i>YD</i>	Included		Included		Included		Included	
<i>IND</i>	Included		Included		Included		Included	
<i>N</i>	5,580		5,580		5,580		5,580	
<i>Adj. R²</i>	0.405		0.051		0.467		0.085	
<i>F-value</i>	380.510 (0.000)***		30.878 (0.000)***		489.895 (0.000)***		52.711 (0.000)***	

Note: 1. *, **, *** indicates 1%, 5%, 10% significance level, respectively.

2. Explanation on Variables

HIGH / LOW (BTD) = (accounting profit-taxable income)/high or low total asset, HIGH / LOW (TS) = estimated corporate tax avoidance proposed in Desai and Dharmapala (2006), SIZE = logarithm of total asset, ROA = net income/total asset, LEV = total liabilities/total asset, CFO = operating cash flow/total asset, PPE = (tangible asset-land-asset under construction)/total asset, RNDS = R&D/total sales, GS = (sales during current term-sales during previous term)/sales during previous term, ES = sales from export/total sales, AD = 1 if the auditor's report is unqualified, otherwise 0, BIG4 = 1 if the auditor firm is BIG4, otherwise 0., YD = year dummy variable, IND = industry dummy variable.

5. CONCLUSION

Accounting Standards for Small- and Medium-sized Entities (AS-SME) is enacted to meet the needs of the SME that often lack the accounting capacity. AS-SME provides easiness in writing the financial statement along with convenience for information users. Aside from such legislation, the government authority has provided numerous tax incentives including tax reduction and exemption to SME. Our initial guess is that SME are less likely to avoid tax as they are the beneficiary of the Tax Act.

Still, following the extant studies, there exists the possibility that SME conduct tax avoidance to maximize the firm value. Thus, we intend to examine the financial traits of SME that leads them to corporate tax avoidance, which can be lethal if discovered by the taxation authority. In addition, we empirically investigate the different factors that influence tax avoidance by dividing the total sample into two groups: low tax avoidance group and high tax avoidance group.

This study, following the convention of corporate tax avoidance literature, adopts the measures developed by Desai and Dharmapala (2006), precisely the book-tax difference (BTD) and estimated tax avoidance (TS). We find that profitability (ROA), leverage (LEV), operating cash flow (CFO), capital intensity (PPE), R&D intensity (RNDS), and sales growth (GS) all have a positive impact on corporate tax avoidance, confirming the previous studies. The main difference between the high and low tax avoidance groups lies in R&D intensity and sales growth.

The findings from this study offer policy insight with regards to subsidizing SME. At the same time, the financial traits from the result can be considered as meaningful factors when evaluating SME value.

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ENDNOTES

¹Implementation of accounting standards in the Korea Market

Classification	Until 2008	2009-2010	2011-2012	2013	After 2014
Firms pre-adopting IFRS		Korean International Financial Reporting Statements(K-IFRS)			
Listed firms					
Unlisted firms					
Firms pre-adopting SME	Korean Generally Accepted Accounting Principal(K-GAAP)		Accounting Standards for Small- and Medium-sized Entities (AS for SME)		

² Stock companies subject to external audit (Act on external audit of stock company)

Approximate Standard (Before end of previous accounting period)		Stock-Listed
<ul style="list-style-type: none"> Total Asset over 10 billion 		Stock-listed corporation
<ul style="list-style-type: none"> Total asset over 7 billion 	<ul style="list-style-type: none"> Total liability over 7 billion Total employee over 300 	Stock company converting to stock-listed corporation in corresponding or next accounting period.

External auditing standard: (98.4) Asset 7 billion →(09.1) Asset 10 billion →(09.10) Asset 10 billion liability 7 billion, employees over 300

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