The Impacts of IFRSs and Auditor on Tax Avoidance

Ru-Je Lee[1] and Hui-Sung Kao[2]

Abstract

This research aimed to discuss whether firms have changed their tax avoidance activities after adopting the International Financial Reporting Standards (IFRSs). Moreover, this research firstly used the two factors (auditor industry specialization and auditor's client importance) to confirm whether the auditor's characteristics have the impact on the tax avoidance activities of audit client; then the comparative analysis was conducted before and after the implementation of IFRSs to understand whether auditor's attitude has the different impacts on clients' tax avoidance due to the implementation of IFRSs. The research results showed that firms have the more positive tax avoidance activities after adopting IFRSs. The research also found that the auditor industry specialization has the positive assisting impact on clients' tax avoidance; if the relative importance of audit client to auditor is higher, the auditor will alleviate the clients' tax avoidance. After the IFRSs being adopted, there are more sufficient evidences showing that the auditor is helpful to the clients' tax avoidance, but when auditors faced more important audit clients, the impact of supervising tax avoidance has the weakening trend. This research achievement has verified that the implementation of IFRSs will

---

[1] PH.D. Program of Business, Feng Chia University, Taiwan.

[2] Corresponding author. Department of Accounting, Feng Chia University, Taiwan.

change the tax avoidance behavior of firms and auditors.

1   Introduction

Tax is a part of firm operating costs and engaging in tax avoidance can reduce firms' tax bearing. Researches pointed out that tax avoidance is an activities which can increase enterprise value and firm's shareholders also hold this belief （Graham and Tucker, 2006）. Corporate tax planning may not be illegal, but some aggressive tax planning for the purpose of tax avoidance are illegal tax schemes. Based on the freedom of choice of form of private laws, the taxpayers think that they have the power to arrange some transactions to reduce the tax burden without the violation of legal provisions[3]. Scholars indicate that appropriateness of tax planning should be deemed as a continuous status. On one end point, it is the strict compliance of provisions of tax laws, such as the investment of tax-free bonds or the choice of depreciation method; on the other end point, it is the tax evasion and it contains the gray area which seems to be legal but has the possibility for violation of laws or moral rule. When it gets closer to tax evasion, this part has the higher risk in tax fines and penalties (Lietz, 2013; Hanlon and Heitzman, 2010). Further exploration of the lawfulness of tax avoidance, people often should examine and review whether the legal form is abused and whether it conforms to the legislative spirit of tax laws[4]. From a societal perspective, the payment of tax is the main financing of social public goods. Therefore, if firms adopt the overtly tax avoidance, it is generally not deemed to be paying its ''fair share'' of taxes to the government to cover the financing of public goods (Freedman, 2003).The tax equity will certainly receive the attention from the stakeholders. The tax levy has no compensation characteristic and it can only rely on the income to pay in the

---

[3] When taxpayers have the same economic purpose, they may adopt the different legal means and the different tax burdens will be produced. Under the principle of autonomy of private laws, they have the opportunity to use the possibility that laws become the means to seek for the method to reduce the tax burden.

[4] When taxpayers do not choose the common legal forms considered and believed in tax laws but choose the different detour behavior, multi-stage behavior or other abnormal legal forms to achieve the same economic effect, it can reduce the tax burden, namely it may form the free tax avoidance for the "abuse" of laws. In spite of no violation of private laws, it still has the possibility of collection of duty short-paid according to substance over form principle.

design of income tax system. In terms of the tax burden, firms use the accounting principles to record the operating income and the accounting principles are applied in national tax laws to regularize the calculation of taxable income; only the state is based on the purpose of fiscal policy to make many restrictive and exemption clauses different from financial accounting principles for the calculation of taxable income, causing the difference in accounting income and taxable income. Therefore, with the aim in earnings management, firms often reduce taxable income under the established accounting income to reduce the tax burden[5]. Therefore, this research takes firms' effective tax rate and book-tax difference as the measurement indexes of tax avoidance.

In face of IFRSs promoted by IASB (International Accounting Standards Board), when the essence of some transactions is different from their existing legal forms under the new standard, the accounting principle where the essence is more important than form will be adopted[6]. Where necessary, the managers are granted the greater discretionary power. But faced with the rigescent tax laws, the change in the accounting principle will certainly increase the book-tax difference and such phenomenon is prevalent in the researches of various countries (Martins, 2011; Haverals, 2005). Taiwan's listed and Over the Counter (OTC) firms have adopted IFRSs since 2013, which have also changed the principle of identification of part of benefit and loss. On one hand, this kind of change has significantly increased the book-tax difference; on the other hand, whether the book-tax difference will produce needs the supplement in laws and decrees due to the unclear specifications[7]. Firms' tax avoidance is a function of risk measurement. Firms avoid the tax by means of the new changes in accounting principles and its risk is also a new variable. Therefore, there is the room for discussion that the book-tax difference produced by the implementation of IFRSs has the impact on firms' tax burden and planning. After the implementation of IFRSs in Taiwan, although the relevant regulations were amended in the tax laws in 2014, the schedule of law

---

[5] The difference between financial accounting and taxable income forms book-tax difference. This kind of book-tax difference is classified into permanent difference and temporary difference, so it will also differ when it is used as the execution method of tax avoidance. For instance, the temporary difference is just the problem of time difference and has no effect on the total tax burden. But it still cannot be judged directly that it is not the tool of tax avoidance because it also affects the stabilization of taxable income and time costs.

[6] Such as, sales with buy back agreement or customer loyalty programmers (IFRIC 13).

[7] For instance, according to the regulations of IFRSs, when firms purchase equipment and estimated decommissioning costs of equipment should be listed as "property, plant and equipment" and "liability reserve" based on current cost. The financial accounting will increase the depreciation expense and the interest expenses estimated by liabilities. There is no specific regulation in tax laws whether tax returns can be recognized (Zhang and Fan, 2010).

amendment still falls behind IFRSs implementation. Therefore, it is a problem worth discussing whether the impact of the implementation of IFRSs on firms' tax avoidance is affected by the schedule of law amendment.

Tax avoidance is the behavior of firms' management echelon, but their behavior affects the income tax expense and liabilities in the elements of financial accounting and has become the component of financial statement or tax declaration. This data usually needs to be audited by auditors. Maydew and Shackelford (2007) indicated that the degree of reducing the taxes and fees of tax avoidance is in essence a kind of function between financial accounting standards and tax laws, so the auditors can affect the tax avoidance from the perspective of tax laws and financial accounting. From the perspective of economic dependence, the auditors will put forward the suggestions on tax strategy in order to improve their client's satisfaction. But from the perspective of audit, auditors also need to conduct the risk assessment in audit according to the audit client's tax management activities, so as to assess the misstatement risk in financial statements possibly produced by firms to reduce the tax burden and liability. In order to avoid forming the representation of audit failure for this reason, auditors play the important supervisory role in tax avoidance. In a word, auditors will assist or supervise the audit client's tax avoidance or there exist the different influencing factors.

When the auditors have the better understanding of the industry characteristics of the audit clients, they will make the audit firms gain the dominant position in the operation. Based on the economic incentive, it is speculated that auditor industry specialist will give the positive assistance to firms' tax avoidance. Lin (2017) suggests that audit firms having the industry specialization are positively correlated to audit client's tax avoidance. Relatively, when the auditors give the positive assistance to the firms' tax avoidance, they may consider the problem that the independence is jeopardized. Therefore, in the issue of tax avoidance, auditor's independence should also be discussed. DeAngelo (1981) indicated that auditors have the economic incentive to cater to the audit client's preference for accounting treatment and they even have the stronger economic incentive for the important clients to sacrifice the independence. However, under the reputation hypothesis, auditors have also recognize higher importance audit clients, although they can produce greater economic benefits to the audit firms, but the impact on the reputation of audit firms and the litigation cost will also increase in case of audit failure. Under this factor, it is believed that the auditors will try to alleviate the client's high-risk tax avoidance. Therefore, this paper also attempts to discuss whether the audit firms will affect firms' tax

avoidance due to the audit client's importance.

In face of the implementation of IFRSs, it is also an important issue whether the impact of auditors on audit client's tax avoidance will change. IFRSs emphasize economic substance, so that firms need to apply more professional judgments during the application and the conversion of accounting principles will produce the different impacts due to the difference in industry characteristics. When the auditors are the industry specialists, they have the professional advantage in the field of firms' tax avoidance. Relatively, there is no literature ever discussing whether the auditor's important audit clients worry about their excessive operation of tax avoidance to cause the social criticism or audit failure in face of the change in IFRSs, so as to attempt to alleviate the tax avoidance. Therefore, this research will clarify this issue.

Firstly, this research aimed to discuss whether the implementation of IFRSs is the cause for the firms' positive tax avoidance, so as to further discuss the correlation of the two factors (auditor industry specialization and relative importance of auditor's client) and audit client's tax avoidance; based on this empirical evidence, this research further discussed whether auditors have the different impacts on audit client's tax avoidance activities after the implementation of IFRSs.

According to the empirical research results, after the control of correlated variable of tax avoidance, which shows that firms will apply the book-tax difference caused by IFRSs to conduct the tax avoidance to reduce the tax burden after the adoption of IFRSs. Secondly, examine whether industry specialization of auditor and level of audit client's importance to auditors have impact on the tax avoidance of audit client. The research shows that the auditors having the higher industry specialization are helpful to the audit client's tax avoidance. Therefore, it conforms to the economic dependence hypothesis. In terms of client importance, the auditors alleviate the tax avoidance activity of audit clients having the higher importance. Thus, it conforms to the reputation protection hypothesis. In the end, this research discussed whether the impact of auditor industry specialization and client importance on audit client's tax avoidance changes after the adoption of IFRSs. According to the empirical results, the sufficient evidence shows that the auditors having the higher industry specialization are helpful to the audit client's tax avoidance after the adoption of IFRSs; compared with the result prior to the implementation of IFRSs, when the audit clients are more important to auditors, the impact of auditors' restricting audit client's tax avoidance has the declining trend.

In conclusion, this research has covered the gap of the current researches related to tax avoidance. First of all, this research is the first to discuss whether tax avoidance occurs more frequently after the implementation of IFRSs. This research shows that after firms adopt the IFRSs, the adoption of new accounting principles has the significant impact on firms' tax avoidance. Secondly, the research results also show that due to influence of the industry specialization and reputation hypothesis, auditors will provide the empirical evidence that auditors play the important role in Taiwanese firms' tax avoidance. In the end, this research deeply discusses auditor's attitude towards audit client's tax avoidance activities in face of the implementation of IFRSs.

In terms of policy implication, this research argues that the alleviation in book-tax difference can reduce firms' motivation for tax avoidance and it is also the tax policy direction that government should follow. Therefore, faced with the change in accounting principle caused by the implementation of IFRSs, government should respond to its effect rapidly and amend the laws effectively to alleviate the book-tax difference to achieve the purpose of tax justice. Overall this research also presents the effect of auditors on their audit clients' tax avoidance, which can be used as the argument for the auditor's independence in face of tax problem especially when the accounting principles change. However, from the perspective of risk control, external auditors should constrain clients' tax avoidance when taking on auditor duties.

2   Literature Review and Research Hypotheses

2.1 Tax avoidance and tax risk

Firms' tax avoidance can increase firms' profit, but it is still necessary to consider the benefit and cost problems. When firms have the net benefits, they will engage in risky tax avoidance (Rego and Wilson, 2012), namely, it is planned that the taxes reduced should exceed the relevant costs of executing the plan. In terms of costs of tax avoidance, in addition to opportunity costs, they also include the transaction costs, hidden tax burden and uncertainty. The common transaction costs refer to the costs of entrusting tax advisor or specialist department; hidden tax burden refers to the tax fines and penalties generated when firms are inspected by tax authority; the uncertain costs frequently mentioned means that the tax avoidance affects the enterprise reputation and it is disclosed by the media. Therefore, the issue of reputation will affect firms' tax avoidance strategy

(Gallemore, Maydew, and Thornock, 2012). In this case, firms' tax avoidance is often believed that they have not performed the social responsibility (Erle, 2008). However, from the perspective of stakeholders in the stakeholder theory, Freeman and Reed (1983) believed that although the main task of firms is to maximize the shareholder value, firms should also satisfy all the stakeholders. If these stakeholders withdraw their resources, they may endanger firms' survival. Graham, Hanlon, Shevlin, and Shroff (2014) implemented the field investigation and indicated that the factors affecting enterprise's tax planning strategy mainly lie in paying attention to earnings per share and reputation. Desai and Dharmapala (2008) said that the tax avoidance behavior not merely means that the resources are transferred from government to company's shareholders and it may also represent that managers can make use of tax avoidance behavior to deprive the shareholders of their benefits. Therefore, corporate governance problem is also the factor affecting enterprise's tax avoidance.

Blouin (2014) indicated that when the tax regulations lack the specific rules or have the uncertainty, it is usually believed that firms are more likely to pursue the aggressive strategies. At this time, in terms of firms' tax avoidance, the autonomy of taxable income will make managers operate the taxable income and accounting income reversely to avoid the tax burden. Taiwan's researches also show that under the uncertainty of tax laws, taxpayers will use the tax avoidance to produce the undetermined tax burden and the tax declaration agent will help taxpayers with tax evasion (Chen, 2013). Moreover, when the tax regulations fall behind the changes in economic environment and cannot produce the specific regulations for the new type of economic activities, it is often one of the factors of firms' tax avoidance, but firms also need to bear more uncertain risks. Therefore, the motility and risk of tax avoidance will be affected by the regulations of governmental decrees and its inspection and tax collection procedures in one country.

2.2 IFRSs and tax avoidance

In the past, the researches into IFRSs emphasized the correlation with the quality of financial statements. The research shows that the effect at different levels or in different directions may be produced due to the different environmental factors in various countries (Beneish and Yohn, 2008; Ding and Su, 2008). Landsman, Maydew, and Thornock (2012) found that the direct adoption of IFRSs will be helpful to increasing the informativeness and quality of financial statements.

The implementation of IFRSs will increase the book-tax difference, and financial accounting and taxation may respectively adopt different income measurement criteria. This dichotomy in finance and tax may promote the management personnel to adopt opportunistic activities and meanwhile increase the earnings of financial statements and reduce the taxable income. Procházka and Molín (2016) indicated that the European Union's firms conduct the tax avoidance to a certain extent by abusing the conversion of IFRSs. Chan, Lin, and Mo (2010) suggested that the adoption of IFRSs will reduce the book-tax conformity and increase firms' tax noncompliance. According to the researches of Karampinis and Hevas (2013), before the implementation of IFRSs in Greece, the tax pressure obviously affects firms' discretionary accruals and restricts the effect of earnings management. However, IFRS adoption reduced book–tax conformity, thereby releasing financial income from tax implications. Braga (2017) conducted the research among 35 countries from 1999 to 2014 and according to his conclusion, after mandatory IFRSs adoption, firms engage more in tax avoidance. Even when the level of book-tax conformity required in the countries and the volume of accruals are controlled, the same correlation will also be produced.

Therefore, by integrating the relevant literature, the implementation of the IFRSs forms more different income recognition methods than the tax laws, based on the fact that firms have the freedom of choice for the forms of private laws, so firms believe that they have the power to arrange some transactions to reduce the tax burden without the violation of laws. Therefore, this research infers that after the adoption of IFRSs, firms will make use of the change in accounting principle for aggressive tax avoidance and first hypothesis is hereby established as below:

H1: Firms' tax avoidance are increased after the adoption of IFRSs

2.3 Auditor and tax avoidance

Audit fees are the main income source of audit firms. So, it is very difficult that auditor's attestation is not affected by economic incentive. The scholars devote themselves to discussing whether auditors will acquiesce to or assist the audit clients to engage in the activities beneficial to the financial statements based on the factor of economic dependence. Reynolds and Francis (2000) thought that whether auditors will report the material misstatement in specific clients' financial statements lies in the trade-off between economic dependence and reputation protection. Prior research suggests that tax expense is difficult for auditors to evaluate because of the complexity of the tax laws and that the substantial

judgment that must be exercised in estimating the various components of tax expense (Dhaliwal, Gleason, and Mills, 2004). In case of excessive tax avoidance, the uncertainty is produced to cause the financial statements to have the potential risk of material misstatement. Therefore, in terms of auditor's standpoint, in case that the significant tax evasion activities occur to audit clients, it will attract the attention from society and media and will also form the representation of audit failure of auditors.

Under the tax legislation, auditors will also be responsible for the audit work of the firms' annual income tax returns. Therefore, auditors have the obligation to adhere to decrees in auditing, instead of merely executing the significant risk assessment in the audit of financial statements. When taxpayers underreport the tax amount as much as possible, the inspection rate of state administration of taxation will be higher (Huang and Lin, 2009; Huang, 2010). In this case, the auditors in charge of attestation declaration will increase many related execution costs and they may lose the trustworthiness of tax authority for auditors. Therefore, the trade-off between auditors' economic dependence and reputation protection may also affected by attested tax returns business they are responsible for.

2.3.1 Auditor industry specialization (Auditor industry specialists)

Dopuch and Simunic (1980) expanded the definition for audit and regarded audit as a kind of a multi-attribute service and auditors will establish the difference of their own service to improve their audit client's satisfaction, so as to obtain the higher returns. O'Reilly, Dennis, and Reisch (2002) indicated that the auditing market becomes more competitive, so auditors will develop industry specialization strategy as the coping method, so as to maintain the market share, establish the market segmentation, increase the competitiveness beyond the price and even achieve the scale economies effect based on the control of costs. Relatively, it is sometimes difficult for the auditor industry specialists to maintain their special tax strategy. Brown (2011) found that the firms having the common members of the board of directors are more likely to use the similar tax strategy. Thus, the industry specialists may lose their uniqueness.

If auditors have the position of industry specialists, it is indicated that the audit firms of industry specialists can better increase the earnings quality of audit client than the audit firms of non-industry specialists. When the auditors are very familiar with the industry characteristics of the specific industries, they can put forward the suitable auditors' report about whether the financial statements of the audited clients are faithful representation (Krishnan, 2003; Balsam, Krishnan, and

Yang, 2003). Johnson, Jamal, and Berryman (1991) indicated that industry experience can help auditors improve the debugging capability and detect the financial statement error. The research of McGuire, Omer, and Wang (2012) found that the auditor's overall industry knowledge (namely integrated tax and audit professional knowledge) is positive associated with greater tax avoidance, which means that the overall industry specialists can combine their audit and tax knowledge to make the tax strategy to make the audit clients benefit from tax and financial statements. In addition, their research also found that even if the auditors are only engaged in auditing business and provide no service of tax advisor, they remain to be correlated to client's greater tax avoidance. The research of Wei and Chen (2016) found that when the auditors have the lower independence, the auditor industry expertise may encourage clients' tax avoidance instead of restricting it. Therefore, from the perspective of tax, the industry professional knowledge may encourage firms to avoid the tax because the industry specialists can use their professional knowledge to make the tax strategy favorable to audit client.

2.3.2 Auditor's client importance

According to the literature review on the influencing factors of audit quality, the independence is the important influencing factor and the auditor's client importance is often the major consideration. Researches believed that the audit fee charged by auditors from the audited clients have the property of quasi-rents and proposed the auditors to enjoy the client's future quasi-rent, so the economic incentive will cause the auditors to cater to the audited clients' preference for the accounting treatment or audit opinions and make compromise in independence. And when the scale of audit clients accounts for the larger proportion in auditor's business, the more likely it is that the auditors will violate the independence (DeAngelo, 1981; Reynold and Francis, 2000). However, in the theory of reputation hypothesis, the previous researches believed that the important clients have made larger contribution to the performance of audit firms, their future quasi-rent is higher and auditors will cater to the demand of management level for their higher dependence on economy, but once the audit failure occurs, the auditor's reputation loss and litigation costs will be higher because the important clients have the higher popularity. In this case, the auditors will bear the risk of losing the clients for their dependence, so auditors hold the conservative attitude towards issuing auditing opinions to important clients (Bonner, Palmrose, and Young, 1998; Shafer, Morris, and Ketchand, 1999). In conclusion, whether

auditors sacrifice the independence is actually the trade-off between costs and benefits. In order to predict the correlation between auditors and tax avoidance of important audit clients, it is required to discuss auditor's trade-off between economic dependence and reputation protection. Chun, Qiang, and Zhang (2013) indicate that firms with excessive irresponsible social responsibility activities are more aggressive in avoiding taxes, lending credence to the idea that corporate culture affects tax avoidance. Therefore, if firms are engaged in excessive tax avoidance and the significant fines and penalties occur, it will affect not only the enterprise reputation but also auditor's reputation. Based on this, this research predicts that in case of more important audit clients, the auditors will be based on their supervision standpoint to restrict audit client's tax avoidance.

According to the aforesaid discussion, auditors will have the helping effect on audit client's tax avoidance by using their industry specialization, so it is expected that audit client will present the more positive tax avoidance activities. In terms of audit client's importance, auditors will be based on the reputation hypothesis to restrict the audit client's excessive tax avoidance activities. Therefore, this research anticipates that the auditors will alleviate the tax avoidance activities of important audit clients and second hypothesis is hereby established as below:

H2a: under the hypothesis of economic dependence, industry specialization of auditor is positively associated with clients' tax avoidance.

H2b: under the hypothesis of reputation protection, importance of auditor's client is negatively associated with client's tax avoidance.

2.4 Effect of auditors on client's tax avoidance before and after the implementation of IFRSs

The implementation of IFRSs gets rid of "historical costs" and takes the fair values the orientation, returning to the situation where the substance is more important than form. In terms of the change in accounting principles, in addition to the bigger book-tax difference produced, in face of the industry characteristics involved, the complexity in the applied tax laws will certainly increase. Therefore, when auditors more familiar with the industry, their freedom of choice in the forms of private laws may have the more operational intelligence in face to the newly increased book-tax difference. Even if some uncertain tax regulation exists, they can become more familiar to judge and explain the law's applicability space when they have the higher industry familiarity. Thus, it is expected that the adoption of

IFRSs will become helpful to audit client's tax avoidance activities. However, relatively speaking, it also needs to consider whether the audit client's importance, change in accounting principles, increased risk of uncertainty in the applicability of laws and regulations and the activities arrangement of private laws of cooperating with the deeds of new accounting principles fall into the punishment of substance over form principle when the Wirtschaftliche Betrachtungsweise is emphasized. Therefore, based on reputation hypothesis, it is expected that the auditor will strengthen their supervision of the clients to adopt tax planning after the implementation of IFRSs. In conclusion, this research hereby establishes third hypothesis as below:

H3a: after the adoption of IFRSs, when the auditor industry specialization is higher, the audit clients will have the more positive tax avoidance activities.

H3b: after the adoption of IFRSs, when the audit clients are important to auditors, it will more alleviate audit client's tax avoidance activities.

3   Sample and research design

3.1 Data source and sample selection

This research took the firms listed in Taiwan Stock Exchange Corporation and Taiwan Securities Over-The-Counter Trading Center (OCT) firms during the period from 2011 to 2014 as the research subjects. The empirical data sources required by this research respectively are obtained from corporate basic database, corporate governance database and financial database of Taiwan Economic Journal (TEJ). The industry nature of securities, financial, insurance and investment industry is special, so they will not be incorporated into the sample range of this research. This research used effective tax rate (including BETR and CETR) and book-tax difference (BTD) as the dependent variables. Taiwan's profit-seeking firms' income tax rate was regulated from 25% to 17% in 2010. Because half of the income tax paid in cash is the amount reached by the following year after the end of the year. So, the income tax rate of cash payment in 2010 still partly contains tax rate of 25% of original tax system. Since 2011, this research preliminarily obtained 6,398 samples. Moreover, this research considered that when firms' net loss before tax and ETR are negative, they belong to the abnormal effective tax rate or mean having no tax avoidance (Landry, Deslandes, and Fortin, 2013; Lin, 2017), so 1,539 samples whose observed value of ETR and net income

before tax are negative were deleted. In addition, 664 samples whose variable data during the period are incomplete were deducted. In the end, the observed values of 4,195 effective samples were obtained. In the calculation of variables, in consideration of the possible effect of extreme value on regression model, this research referred to the practice of McGuire, et al. (2012) and took ETR value equal to 1 as the benchmark and ETR value greater than 1 is set as 1. Table 1 reports the sample selection process:

Table 1: Sample selection process

Listed and OTC firm samples excluding the firms in financial, insurance and securities industry from 2011 to 2014	6,398
Less: the data of correlated variables are incomplete	(664)
Effective tax rate and pre-tax accounting income are negative	(1,539)
Effective observed value	4,195

3.2 Regression model and variable definition

This research aimed to discuss the correlation between the adoption of IFRSs, characteristics of auditors and firms' tax avoidance, so the variable (TA) was used as the dependent variable to measure firms' degree of tax avoidance; the 3 variables of book effective tax rate (BETR), cash effective tax rate (CETR) and book-tax difference (BTD) were respectively used as the proxy variables; the independent variables included the dummy variable (POST) whether enterprises adopt IFRSs, auditor industry specialization (EXPERT) and audit client's importance (IMP). This study estimates the OLS regression model. In order to verify H1 and H2, Model I was established, as shown in equation (1); ModelII was used to verify H3, as shown in equation. (2):

$$TA_{it} = \beta_0 + \beta_1 POST_{it} + \beta_2 EXPERT_{it} + \beta_3 IMP_{it} + \beta_4 COMM_{it} + \beta_5 INDB_{it} + \quad (1)$$
$$\beta_6 SIZE_{it} + \beta_7 DEBT_{it} + \beta_8 PPE_{it} + \beta_9 ROA_{it} + \beta_{10} GRA_{it} + \beta_{11} R\&D_{it} +$$
$$\beta_{12} EQINC_{it} + \beta_{13} TENURE_{it} + \beta_{14} BIG4_{it} + \gamma Industry\ Dummies + \varepsilon_{it}$$

$$TA_{it} = \delta_0 + \delta_1 EXPERT_{it} + \delta_2 IMP_{it} + \delta_3 COMM_{it} + \delta_4 INDB_{it} + \delta_5 SIZE_{it} + \quad (2)$$
$$\delta_6 DEBT_{it} + \delta_7 PPE_{it} + \delta_8 ROA_{it} + \beta_9 GRA_{it} + \delta_{10} R\&D_{it} + \delta_{11} EQINC_{it}$$
$$+ \delta_{12} TENURE_{it} + \delta_{13} BIG4_{it} + \gamma Industry\ Dummies + \varepsilon_{it}$$

Table 2: Variable Measurement

Dependent variables: Measures of Tax Avoidance (TA)	
BETR	Book effective tax rate; income tax expense divided by pre-tax accounting income.
	BETR and pre-tax accounting income with negative are deleted.
CETR	Cash effective tax rate; cash taxes paid divided by pre-tax accounting income less special items.
	CETR and pre-tax accounting income with negative are deleted.
BTD	Book-tax difference; pre-tax accounting income less the value of taxable income scaled by total assets.
	Taxable income = current income tax expense / statutory tax rate 17%
	Current income tax expense = income tax expense (+) deferred income tax assets at the end of period (-) deferred income tax liabilities at the end of period (-) deferred income tax assets at the beginning of period (+) deferred income tax liabilities at the beginning of period
Main explanatory variables	
POST	Adoption of IFRSs ; indicator variable equal to 1 if IFRSs are adopted ; 0 otherwise.
EXPERT	Auditor industry specialization; the client's total sales amount of listed and OTC firms of this industry audited by audit firms divided by total sales amount of listed and OTC firms of this industry.
IMP	Auditor's client importance; ratio of client's sales of individual listed and OTC firms in total client's sales of listed and OTC firms of audit firms.
Control variables	
COMM	The setting the audit committee; indicator variable equal to 1 if the audit committee is established; 0 otherwise.
INDB	Ratio of independent director; the seats of independent directors divided by seats of all the directors.
SIZE	Company size; natural logarithm of book value of the total assets at the end of period.

DEBT	Debt ratio; total liabilities at the end of period scaled by total assets at the end of period.
PPE	Capital asset concentration; property, plant and equipment at the end of period scaled by total assets at the end of period.
ROA	Return on assets; measured as the ratio of income before interest expense to the average of total assets for the year.
GRA	Growth of asset; total assets at the end of period less total assets at the beginning of period divided by total assets at the beginning of period.
R&D	Research and development expenditure; research and development expenses scaled by total assets at the end of period.
EQINC	Income related to the equity method; investments income and loss recognized under equity method scaled by total assets at the end of period.
TENURE	Auditor tenure; years of firms audited by audit firms (calculated from 1983).
BIG4	Audit firms size; indicator variable equal to 1 if audited by a Big 4 firm; 0 otherwise. The big 4 means Deloitte & Touche, Ernst & Young, KPMG, and Price Waterhouse Coopers.

The subscripts i and t denote firms and year respectively.

3.2.1 Measurement of dependent variables

Effective tax rate (BETR and CETR）：As for the measurement method of tax avoidance, this research defined the tax avoidance as the firms' strategies and activities to reduce the tax expenditure or liabilities. However, the scholars have no consistent opinions about the proxy variable used to measure the degree of tax avoidance. This research firstly used ETR adopted by most scholars currently as the proxy variable of tax avoidance (Chen, Chen, Cheng, and Shevlin, 2010; Dyreng, Hanlon, and Maydew, 2008). However, in regard to the calculation of ETR value, Dyreng et al. indicated that when the research uses the data for a single year, it may be affected by special event during the current period and the long-term method can avoid the differentiation produced by the specific tax management activities. However, in regard to the calculation of ETR value, Dyreng et al. indicated that when the research uses the data for a single year, it

may be affected by special event during the current period and the long-term method can avoid the differentiation produced by the specific tax management activities. Chen et al. adopted the materials in a single year and the research samples involve the change in income tax rate in 2011 and the implementation of IFRSs since 2013, so the data years are limited. In this case, this research referred to the measurement method of ETR of Chen et al. and the ETR in a single year was used as the proxy variable of tax avoidance.

BETR is adopted by most scholars and this aggregated figure expresses the level of corporate income tax burden as well as the different degrees of tax reduction and exemption enjoyed by firms (Chen, 2002). The previous researches believed that the lower ETR represents the higher degree of tax avoidance (Chen and Tsai, 2006; Chen et al., 2010). The income tax expenses in financial accounting include the current income tax expense and deferred income tax expense. The deferred income tax expense is produced by the temporary difference recognized by financial income and taxable income, but it cannot affect the current payment of income tax. Therefore, the proxy variable of this research also adopted CETR and it was measured by the cash income tax paid in various periods reported by firms divided by the net income before the tax of financial accounting. This measurement method emphasizes the cash taxes paid by firms.

Book-tax difference (BTD)：It is indicated in the preceding part of this paper that book-tax difference is positively correlated to tax avoidance. Mills (1998) pointed out that the firms having larger book-tax difference may be audited by tax authority and have the significant audit adjustment, which shows that book-tax difference involves some tax avoidance factors. Wilson (2009) adopted paired samples to conduct the research and according to the test, the book-tax difference of firms which are accused of engaging in tax avoidance is greater than those which are not accused. The book-tax differences include permanent difference and temporary difference. However, some scholars' researches adopt permanent difference to measure firms' tax avoidance (Chen et al., 2010). However, this practice has not gained the powerful support (Hanlon and Heitzman, 2010). The BTD calculation method in this research referred to the method of Wilson (2009).

BTD is calculated using pre-tax accounting income minus taxable income. Therefore, the BTD calculated is greater；its tax burden is lower. Namely, when the BTD value is greater, firms have the higher tax avoidance and its direction is contrary to BETR and CETR.

3.2.2 Measurement of independent variables

This research included 3 independent variables: (1) whether firms adopt IFRSs (POST), (2) auditor industry specialization (EXPERT), (3) audit client's importance to auditors (IMP), and they are respectively described as below:

*Adoption of IFRSs (*POST*)*: Since 2013, Taiwan's listed and OTC firms have formally adopted IFRSs to prepare the financial statements. It has been proved in many researches that the accounting standard setting affects the amount and disclosure of financial statements to further affect firm's operating and accounting decision making. Thus, the economic consequences of accounting standards are produced (Solomons, 1978). Differences between IFRSs and tax regulations will also affect the firms' tax management and it may produce the ethical risk of tax strategy.

Auditor industry specialization (EXPERT): According to the previous researches, most audit firms having the larger market share may be the industry specialists (DeAngelo, 1981) because they can strengthen the training of specific industry knowledge and experience through providing services to a large number of clients. The realization of auditor industry specialization relies on the mutual aid between the groups in audit firms. Especially, the tax has its uniqueness and it often needs to rely on the assistance of tax department established separately. Therefore, this research was based on the whole audit firm. The completion degree of auditor industry specialization cannot be observed directly. By following the practice of the previous literature (Palmrose, 1986; Krishnan, 2003; Balsam et al., 2003), this research took the market share as the measurement index of auditor industry specialization and audit client's sales was used as the basis of the market share to measure the degree of auditor industry specialization. Its calculation method is shown as below:

According to Krishnan (2003), this research adopted the ratio of clients in specific industries in the client portfolio of audit firms as one of the measurement methods of industry specialist auditor.

$$\text{EXPERT} = \sum_{j=1}^{J} REV_{\text{hjk}} \Big/ \sum_{h=1}^{H}\sum_{j=1}^{J} REV_{\text{hjk}}$$

Where REV_{hjk} is sales revenue of the J client in the k industry of the h audit firm ; The numerator is the sum of sales of all the J_{hk} clients in the k industry of the h audit firm, and the denominator is the sales of J_{hk} clients in k industry summed over all H_k audit firms in the sample with clients (J_{hk}) in industry k.

Auditor's Client importance (IMP): In most researches, it is believed that the measurement for the importance of specific audit clients in individual auditors or clients of audit firms should be based on the audit fees (Chung and Kallapur, 2003; Hunt and Lulseged, 2007), but Taiwan has not compulsively required all the firms to disclose the audit fees at present. The complete data of audit fees of individual firms also cannot be gained. Therefore, this research referred to the practice of earlier researches (Watts and Lys, 1994; Reynolds and Francus, 2000) in foreign countries and took the proportion of individual client's sales in the sales of all the clients of audit firms as the proxy variable.

3.2.3 Control variable

In addition to our main variable of interest, we control for other factors that prior research suggests are associated with tax avoidance. The model first controls for firm performance (ROA), because the highly profitable firms will pay the relatively high income tax. In order to reduce the taxes, they have the increasing incentive to engage in tax avoidance to reduce their tax burden (Chen et al., 2010; Frank, Lynch, and Rego, 2009).

The model second controls for the firm's corporate governance (INDB, COMM). Prior research suggests that the outside directors are significantly negatively correlated to firms' tax avoidance, showing the more the independent directors are, the better the corporate governance will be, which can restrict management echelon's tax avoidance (Lanis and Richardson, 2011; Lin, 2015)；Moreover, Richardson, Taylor, and Lanis (2013) pointed out that when the audit committee has the higher independence, firms will relatively not conduct the tax avoidance.

The model also controls for the firm's growth opportunities (GRA) and firm size (SIZE), Phillips, Pincus, and Rego (2003) thought that the growing enterprise may have more opportunities for tax avoidance, thus we include GRA；Because auditor industry specialization is based on audit firms' market share, so we consider the size of the firms. In terms of the relationship between company size and tax avoidance, there are different inferences under different hypotheses. Affected by political cost hypothesis, enterprise size is positively correlated to effective tax rate (Minnick and Noga, 2010; Zimmerman, 1983; Chen, 2002). But the other one is political power hypothesis. The enterprise size is negatively correlated to effective tax rate (Rego, 2003; Dyreng et al., 2008).

Because they may also affect tax avoidance, firms' capital structure or

leverage (DEBT) and asset mix (PPE、R&D and EQINC) are incorporated. In the modern capital structure theory, when the liabilities are used to replace stock right to increase the debt interest expenses, it can produce the tax shield effect. Therefore, the firms having more borrowings will have more interest expenses, thus they will have no need to actively engage in other types of tax avoidance (Chen et al., 2010). But some literature have different opinions（Gupta and Newberry, 1997）；In addition, according to the empirical analysis of Mills (1998), capital asset concentration is significantly positively correlated to tax avoidance, thus we include PPE；In terms of expenditure （Profit and loss factor）, research and development expenses often can obtain the tax reduction to reduce the effective tax rate (Dyreng et al., 2008)；and the income and loss on investments recognized according to equity method is usually deemed as the unrealized gains and losses in tax laws, so it is a major factor in book-tax difference. In the researches of Chen et al. (2010), Frank et al. (2009), Huang (2010), R&D and EQINC are included in the control variable.

The characteristics of the audit firm are also considered. We control for whether the external auditor is a Big 4 audit firm (BIG4) and years of firms audited by audit firms （TENURE）. Auditor's tenure is used as the control variable to consider the economic dependence and close relationship between auditors and audit clients and the auditors having the longer tenure may acquiesce in audit clients' expectation.

4 Empirical Results

4.1 Descriptive statistics and correlation coefficient analysis

The descriptive statistics of various variables are shown in Table 3. According to Table 3, the samples were divided into 2 parts: samples during the period from 2011 to 2012 before the implementation of IFRSs and samples during the period from 2013 to 2014 after the implementation of IFRSs. In terms of proxy variable of tax avoidance, the average of BETR, CETR and BTD is respectively 0.2278, 0.2068, and -0.0082 before the implementation of IFRSs and it is respectively 0.2124, 0.1865, and 0.0034 after the implementation of IFRSs. Before and after the implementation of IFRSs, its difference has reached the significant level of 1%, showing that BETR and CETR after the implementation of IFRSs are significantly smaller than those before the implementation of IFRSs, and BTD after the implementation of IFRSs is significantly larger than that before the implementation of IFRSs. Secondly, in terms of the comparison of their medians, the median of BETR, CETR and BTD is respectively 0.1900, 0.1643,

Table 3: Descriptive statistics

| Variables | During the period from 2011 to 2014 (N=4195) | | During the period from 2011 to 2012 before the implementation of IFRSs; during the period from 2013 to 2014 after the implementation of IFRSs | | | | | | | |
| | | | 2011-2012 (N=2008) | | | 2103-2014 (N=2187) | | | diff. test (p-value) | |
	Min	Max	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	Mean	Median
BETR	0.0000	1.0000	0.1900	0.2278	0.1752	0.1865	0.2124	0.1464	0.002 ***	0.200
CETR	0.0000	1.0000	0.1643	0.2068	0.1968	0.1544	0.1865	0.1766	0.000 ***	0.027 **
BTD	-0.2964	0.5450	-0.0087	-0.0082	0.0633	0.0008	0.0034	0.0539	0.000 ***	0.000 ***
EXPERT	0.0000	1.0000	0.2738	0.2623	0.1909	0.2601	0.2689	0.1877	0.260	0.638
IMP	0.0001	0.8509	0.0007	0.0285	0.1208	0.0006	0.0261	0.1175	0.508	0.085 *
COMM	0.0001	1.0000	0.0000	0.0812	0.2732	0.0000	0.1545	0.3616	0.000 ***	-
INDB	0.0000	1.0000	0.2500	0.1932	0.1758	0.2857	0.2227	0.1765	0.000 ***	0.000 ***
SIZE	0.0000	0.6000	6.6187	6.7100	0.6093	6.6434	6.7431	0.6182	0.085	0.568
DEBT	5.4427	9.2381	0.4024	0.4050	0.1685	0.3992	0.4017	0.1655	0.524	0.817
PPE	0.0409	0.9615	0.2550	0.2708	0.1759	0.2386	0.2561	0.1708	0.006 ***	0.000 ***
ROA	3.17E-05	0.9380	0.0581	0.0708	0.0571	0.0589	0.0742	0.0608	0.074 *	0.695
GRA	-0.0223	0.4435	0.0539	0.1929	2.1733	0.0750	0.1328	0.6321	0.558	0.000 ***
R&D	-0.5203	23.6282	0.0111	0.0260	0.0406	0.0125	0.0260	0.0404	0.998	0.070 *
UNCON	0.0000	0.3650	0.0000	0.0015	0.0092	0.0000	0.0016	0.0124	0.930	0.544
TENURE	-0.0267	0.1775	13.0000	12.9552	7.2241	14.0000	14.0000	7.6976	0.000 ***	0.015 **
BIG4	1.0000	32.0000	1.0000	0.8685	0.3380	1.0000	0.8816	0.3232	0.201	-

1. Variables are defined in table 2.

2. All continuous variables are winsorized (reset) at the 0.1st and 99.9th percentiles.

3. ***，**and * respectively represent the significant level of 1%, 5%, and 10%.

4. COMM and BIG4 are dummy variables and the difference test is not done for their medians.

and -0.0087 before the implementation of IFRSs, while it is respectively 0.1865, 0.1544, and 0.0008 after the implementation of IFRSs. Before and after the implementation of IFRSs, its difference (excluding BETR) has reached the significant level of 5%, showing that the tax burden is lower after the implementation of IFRSs, BTD is larger and there is no significant difference in average's descriptive statistics. In terms of control variable, corporate governance variables COMM and INDB have significantly increased after the implementation of IFRSs, showing the improvement of corporate governance system. In terms of the variable (PPE) of company characteristic, it declines significantly after the

implementation of IFRSs, showing the capital expenditure has the declining trend. On the contrary, ROA increases significantly, showing that the profitability has the improving trend. Other control variables have no significant difference before and after the implementation of IFRSs.

4.2 Correlation coefficient test analysis

Table 4 is the table of correlation coefficient between variables. The Pearson correlation is in the upper right of the table and the Spearman's correlation is in the lower left. According to Pearson correlation coefficient, it can be known that POST and BETR are significantly negatively correlated to CETR and significantly positively correlated to BTD, showing that after the adoption of IFRSs, two ETRs (BETR, CETR) become lower and BTD becomes larger, namely it means the degree of tax avoidance becomes larger, which is in line with the expectation of this paper and supports H1. In terms of auditor industry specialization, the correlation coefficient between EXPERT and BERT and CETR is negative, and correlation coefficient between EXPERT and BTD is positive and the coefficient direction is in line with the expectation. BETR has reached the significant level, but in Spearman correlation coefficient, EXPERT and CETR are significantly positively correlated to each other, which is not in line with the expectation of this paper. It seems that H2a cannot gain the significant support temporarily in the part of univariate test and it may be caused by the failure in controlling other correlated variables. In terms of client importance, the correlation coefficient between IMP and BETR, CETR and BTD is negative, the coefficient direction of BETR and CETR is not in line with the expectation and other 3 variables have not reached the significant level in statistics. However, in Spearman correlation coefficient, IMP is significantly positively correlated to BETR and CETR and significantly negatively correlated to BTD, which is in line with the expectation of this paper. In the part of univariate test, it seems that H2b can gain the significant support in Spearman correlation coefficient.

In terms of control variables, as a whole, ROA, GRA, EQINC and TENURE are significantly negatively correlated to BETR and CETR and significantly positively correlated to BTD. INDB, DEBT and PPE are significantly positively correlated to BETR and CETR and significantly negatively correlated to BTD.

In the part of Spearman correlation coefficient, in addition to the above-mentioned description, the correlation direction of independent variable, dependent variable and control variable is similar to that of Pearson correlation

Table 4 Correlation analysis (upper right is Pearson and lower left is Spearman)

	BETR	CETR	BTD	POST	EXPERT	IMP	COMM	INDB	SIZE	DEBT	PPE	ROA	GRA	R&D	EQINC	TENURE	BIG
BETR	1.000	0.573***	-0.396***	-0.048***	-0.029**	-0.016	-0.018	0.028**	-0.031*	0.084***	0.032*	-0.341***	-0.039***	0.039***	-0.105***	-0.043***	0.022*
CETR	0.518***	1.000	-0.336***	-0.054***	-0.005	-0.001	0.004	0.040***	0.017	0.057***	0.034**	-0.302***	-0.056***	-0.019	-0.100***	-0.029**	0.050***
BTD	-0.619***	-0.529***	1.000	0.102***	0.010	-0.019	-0.031**	-0.080***	0.031**	-0.077***	-0.041***	0.272***	0.047***	-0.029***	0.136***	0.049***	-0.025*
POST	-0.022*	-0.049***	0.138***	1.000	0.017	-0.010	0.113***	0.083***	0.027*	-0.010	-0.043***	0.028**	-0.009	0.000	0.001	0.070***	0.020
EXPERT	-0.011	0.023*	-0.003	0.023*	1.000	-0.244***	0.073***	0.051***	0.165***	0.015	0.033**	0.010	0.005	0.070***	0.073***	0.017	0.475***
IMP	0.041***	0.060***	-0.027***	-0.037***	-0.280***	1.000	-0.052***	-0.059***	0.041***	0.036**	-0.027	-0.030**	0.013	-0.065***	-0.022*	0.023*	-0.535***
COMM	0.001	0.029***	-0.035**	0.113***	0.073***	0.025*	1.000	0.372***	0.099***	-0.029*	0.016	0.091***	0.010	0.076***	-0.047***	-0.175***	0.090***
INDB	0.072***	0.076***	-0.077***	0.083***	0.068***	-0.210***	0.394***	1.000	-0.162***	-0.080***	-0.024**	0.155***	-0.013	0.226***	-0.082***	-0.379***	0.146***
SIZE	0.006	0.074***	0.008	0.026**	0.122***	0.651***	0.074***	-0.222***	1.000	0.396***	0.084***	-0.127***	0.055***	-0.188***	0.136***	0.363***	0.100***
DEBT	0.126***	0.071***	-0.085***	-0.009	0.030*	0.317***	-0.037***	-0.093***	0.389***	1.000	0.008	-0.282***	0.120***	-0.245***	-0.032**	0.103***	0.021
PPE	0.053***	0.062***	-0.043***	-0.042***	0.030**	-0.009	0.011	-0.035**	0.072***	-0.002	1.000	-0.127***	-0.076***	-0.201***	-0.076***	0.045***	0.037**
ROA	-0.335***	-0.242***	0.202***	0.028**	0.012	-0.098***	0.102***	0.183***	-0.112***	-0.261***	-0.106***	1.000	0.105***	0.123***	0.114***	-0.130***	0.063***
GRA	-0.048***	-0.132***	0.084***	0.078***	0.003	-0.021*	0.083***	0.147***	0.036**	0.183***	-0.085***	0.326***	1.000	-0.029**	-0.001	-0.040***	-0.001
R&D	0.113***	0.025*	-0.065***	0.011	0.049***	-0.158***	0.085***	0.278***	-0.193***	-0.230***	-0.061***	0.121***	-0.010	1.000	-0.067***	-0.135***	0.097***
EQINC	-0.091***	-0.064***	0.085***	-0.005	0.045***	0.117***	-0.019	-0.117***	0.175***	0.034**	0.008	0.032**	0.001	-0.124***	1.000	0.114***	0.043***
TENURE	-0.046***	-0.018	0.064***	0.066***	0.004	0.266***	-0.181***	-0.374***	0.352***	0.106***	0.046***	-0.132***	-0.159***	-0.111***	0.160***	1.000	-0.048***
BIG4	0.031***	0.062***	-0.041***	0.020	0.534***	-0.535***	0.090***	0.138***	0.084***	0.017	0.032*	0.071***	0.039***	0.120***	0.012	-0.039***	1.000

1. Various variables are defined in Table 2
2. ***, ** and * Indicate statistical significant at the 1%, 5% and 10%, respectively.

coefficient. In conclusion, the preliminary results of the above-mentioned Pearson correlation coefficient analysis and H2a cannot gain the significant support, but in Spearman correlation coefficient analysis, the preliminary results of the above-mentioned Pearson correlation coefficient analysis and H2b can gain the support. The Pearson and Spearman correlation coefficient is merely the univariate analysis, so this research controlled other correlated variables to conduct the multiple regression analysis below.

5   Regression analysis result

5.1 Correlation between adoption of IFRSs and firms' tax avoidance

H1's regression result is shown in Table 5. This research discusses the relationship between the adoption of IFRSs (POST) and tax avoidance (BETR, CETR and BTD). The hypothesis predicts that firms after the adoption of IFRSs will have the higher degree of tax avoidance, so one-tailed test was adopted in table columns. In tax avoidance, lower values of BETR, CETR and higher values of BTD represent higher levels of tax avoidance. According to the empirical results, POST is negatively correlated to BETR and CETR and positively correlated to BTD and they have reached the significant level of 1%. Namely the results support H1. The empirical results show that after firms adopt IFRSs, income tax's ETR becomes lower and BTD becomes larger, which shows firms are more positive in tax avoidance activities after adopting IFRSs.

5.2 Correlation between auditor industry specialization and client importance and tax avoidance

H2 is to discuss the relationship between auditor industry specialization (EXPERT) and client importance (IMP) and firms' tax avoidance (TA). The regressions result is also shown in Table 5. It is predicted that the higher degree of auditor industry specialization will produce the correlation with audit client's tax avoidance, and the more important audit clients will alleviate audit client's tax avoidance. So, one-tailed test was adopted in table columns. According to the regression and empirical results, EXPERT is negatively correlated to BETR and CETR and it has reached the significant level of 5%; EXPERT is positively correlated to BTD, but it is not significant. The empirical result still supports H2a, meaning the higher the entrusted auditor's industry specialization is, the higher the audit client's tax avoidance will be. Namely, auditor industry specialists based on

reputational hypothesis have the helping effect on audit client's tax avoidance.

As for the test of client importance, IMP is positively correlated to CETR, achieving the significant level of 5%; IMP is negatively correlated to BTD, achieving the significant level of 1%. Moreover, the coefficient between IMP and BETR is positive, but it has not reached the significant level. However, this result still supports H2b of this research, namely when the audit client's importance to auditors is higher, the degree of audit client's tax avoidance is lower, showing that auditors will be based on the reputation hypothesis to supervise audit client's tax avoidance activities to produce the effect of alleviating audit client's tax avoidance.

5.3 Control variables

In regard to corporate governance variables, INDB is significantly positively correlated to BETR and CETR and significantly negatively correlated to BTD, and COMM is significantly negatively correlated to BTD, showing that firms where the ratio of seats of independent directors is higher and the audit committee is established have the better corporate governance and they will not be positive in tax avoidance. In terms of variables of company traits, SIZE is significantly positively correlated to CETR, which means that the larger the company size is, the higher the ETR will be and the smaller the radicalness degree in tax avoidance will be, which is in line with the political cost hypothesis. DEBT is significantly negatively correlated to CETR, showing that firms where the debt ratio is higher will engage in tax avoidance; PPE is significantly negatively correlated to BETR and CETR and significantly positive correlated to BTD. It is inferred that book-tax difference of depreciation expense and investment tax credit in equipment are the causes for firms' tax planning. ROA and EQINC are significantly negatively correlated to BETR and CETR and significantly positively correlated to BTD, which is in line with the expected direction. In the part of ROA, it shows that when firms' profitability is higher, they may be more positive to engage in tax avoidance to reduce the tax burden. This result is in line with the research of Frank et al. (2009) and Chen et al. (2010). In the part of EQINC, it shows that when firms' investments income and loss recognized under the equity method is higher, the BETR and CETR will be lower, and BTD will be larger. GRA is significantly negatively correlated to CETR and significantly positively correlated to BTD, showing that the growing firms may have the more opportunities to engage in tax avoidance. R&D is significantly positively

Table 5: IFRSs, auditor and tax avoidance

Variables	Expected direction ETR/BTD	BETR Coefficient	t-value	CETR Coefficient	t-value	BTD Coefficient	t-value
INTERCEP		0.338 ***	11.138	0.189 ***	5.284	-0.015 *	-1.372
POST	-/+	-0.012 ***	-2.493	-0.019 ***	-3.439	0.012 ***	7.121
EXPERT	-/+	-0.042 ***	-2.957	-0.037 **	-2.172	0.006	1.257
IMP	+/-	-0.003	-0.130	0.058 **	2.121	-0.023 ***	-2.858
COMM	+/-	-0.003	-0.420	0.003	0.284	-0.004 *	-1.552
INDB	+/-	0.023 *	1.414	0.062 ***	3.279	-0.026 ***	-4.531
SIZE	?	-0.004	-0.928	0.015 ***	2.630	-0.001	-0.643
DEBT	?	0.018	1.090	-0.057 ***	-2.853	-0.006	-1.038
PPE	-/+	-0.020 *	-1.291	-0.036 **	-1.945	0.011 **	1.887
ROA	-/+	-0.994 ***	-22.920	-1.046 ***	-20.428	0.278 ***	18.094
GRA	-/+	-0.001	-0.394	-0.006 **	-1.910	0.002 **	1.708
R&D	-/+	0.217 ***	3.003	0.003	0.030	-0.081 ***	-3.151
EQINC	-/+	-0.889 ***	-3.511	-1.312 ***	-4.389	0.612 ***	6.818
TENURE	-/+	-0.001 ***	-2.648	-0.001 **	-2.168	1.9E-04 *	1.430
BIG4	+/-	0.025 ***	2.708	0.055 ***	5.003	-0.009 ***	-2.687
INDUSTRY		YES		YES		YES	
N		4195		4195		4195	
Adj. R^2(%)		0.164		0.134		0.169	
F Value		20.076 ***		16.085 ***		20.812 ***	

Note: 1. The definition of various variables is shown in Table 2.

2. ***, ** and * Indicate statistical significant at the 1%, 5% and 10%, respectively.

3. Industry dummies have been put in the model analysis (indicated with INDUSTRY), but they have not been listed one by one.

correlated to BETR and significantly negatively correlated to BTD, but they are not in line with the expected direction. It is speculated that the tax authority may be stricter with the audit, research and development of investment tax credit to conversely affect recognition problem of representation of research and development expenses. As for the control variable of auditor's characteristics, TENURE is significantly negatively correlated to BETR and CETR and

significantly positively correlated to BTD, showing that when the auditor's tenure is longer, the independence may be affected, and it has the helping effect on audit client's tax avoidance. BIG4 is significantly positively correlated to BETR and CETR and significantly negatively correlated to BTD, showing that if firms are audited by the big four audit firms, their degree of tax avoidance will be smaller, which conforms to the reputation hypothesis.

In order to avoid the doubt for colinearity, variance inflation factor (VIF) was used for test and the VIF scope of various variables in the regression lies 1~2, all smaller than 10. Therefore, it can be reasonably estimated that the explanatory variable adopted by the empirical model of this research has not been affected by severe colinearity.

5.4 Change in the correlation between auditor industry specialization and client importance and tax avoidance after the implementation of IFRSs

Table 6 shows the regression result of H3. In order to test the effect of auditors on audit client's tax avoidance after the adoption of IFRSs, this research divided the samples into 2 parts: during the period from 2011 to 2012 before the adoption of IFRSs and during the period from 2013 to 2014 after the adoption of IFRSs, and used the 2 variables of auditor industry specialization (EXPERT) and proportion of client importance (IMP) to test whether the audit client's initiative in tax avoidance changes after the adoption of IFRSs.

According to the empirical results, in terms of auditor industry specialization, EXPERT is negatively correlated to BETR before the adoption of IFRSs, achieving the significant level of 5%; the coefficient between EXPERT and CETR is negative and the coefficient between EXPERT and BTD positive, but both of them have not reached the significant level. After the adoption of IFRSs, EXPERT is negatively correlated to BETR and CETR, achieving the significant level of 10%. The correlation of EXPERT and BTD is positive, but it has not reached the significant level. After the coefficient relationship before and after the adoption of IFRSs is further analyzed, the regression coefficient of EXPERT and BETR has no significant difference before and after the adoption of IFRSs[8]. In terms of EXPERT and CETR, there was a significant negative correlation after the adoption

---

[8] This research adopts the research method of Altman and Bland (2003) to test whether there is significant difference in regression coefficient before and after the implementation of IFRSs. After the calculation, Z value is -0.176, not achieving the significant level, which shows that there is no significant difference in correlation coefficient of EXPERT and BETR before and after the implementation of IFRSs.

of IFRSs, but not significantly before the adoption of IFRSs. This result shows that there are more sufficient evidences that the auditors having the higher industry specialization can help the audit clients with the tax avoidance after the adoption of IFRSs. This result can support H3a of this research.

In terms of audit client's importance to auditors, before the adoption of IFRSs, IMP is positively correlated to CETR and negatively correlated to BTD and they have reached the significant level of 10%. The coefficient between IMP and BETR is positive, but it has not reached the significant level. After the adoption of IFRSs, IMP is negatively correlated to BTD, achieving the significant level of 5%. However, the coefficient between IMP and BETR is negative, and the coefficient between IMP and CETR is positive, neither of them achieving the significant level. After the coefficient relation before and after the adoption of IFRSs is further analyzed, there is no obvious difference in the regression coefficient of IMP and BTD before and after the adoption of IFRSs[9]. However, in terms of IMP and CETR, before the adoption of IFRSs, the coefficient between IMP and CETR is significantly positive. But after the adoption of IFRSs, its significance does not exist. This result shows that auditors have the alleviating effect on the tax avoidance of more important audit clients before the adoption of IFRSs. But after the adoption of IFRSs, the restriction effect has the declining trend and this result cannot support H3b in this paper. Thus, this paper infers that in face of the adoption of IFRSs, firms are more positive in tax avoidance after the adoption of IFRSs (H1 has gained the support). However, firms make use of the newly established BTD to engage in tax avoidance and it is not easy to judge the risks of tax avoidance because the typed cases audited by tax authority have not been formed[10]; or the uncertain factors still exist in the regulation of tax law and manager's risk bearing degree is different, so auditors may not necessarily use the

---

[9] Similar to the method in the previous note, after calculation, Z value is -0.366, not achieving the significant level, which shows that there is no significant difference in correlation coefficient of IMP and BTD before and after the implementation of IFRSs.

[10] Enterprises use the freedom formed by legal forms to make the excessively aggressive tax strategy. Such behavior is often judged by taxing authority as the "abuse" of legal forms, so the collection of duty short-paid is required according to Substance over Form Principle. When the same cases accumulate, the typed tax avoidance cases will be formed. At this time, if this kind of legal form is adopted, the high-risk tax avoidance means will be formed. This is often used as the speaking note that auditors supervise audit client's excessively aggressive tax strategy.

Table 6: IFRSs, auditor and tax avoidance
(distinguishing the samples before and after the implementation of IFRSs)

Variables	Expected direction ETR/BTD	Before the implementation of IFRSs (2011-2012)			After the implementation of IFRSs (2013-2014)		
		BETR	CETR	BTD	BETR	CETR	BTD
INTERCEP		0.343 ***	0.210 ***	-0.035 **	0.309 ***	0.150 ***	0.009
		(7.187)	(3.829)	(-1.981)	(8.051)	(3.206)	(0.659)
EXPERT	-/+	-0.044 **	-0.032	0.006	-0.039 **	-0.039 **	0.006
		(-1.983)	(-1.269)	(0.766)	(-2.105)	(-1.749)	(0.915)
IMP	+/-	0.001	0.071 **	-0.027 **	-0.009	0.036	-0.021 **
		(0.034)	(1.753)	(-2.067)	(-0.319)	(0.998)	(-1.990)
COMM	+/-	-0.002	0.001	-0.006	-0.005	0.002	-0.003
		(-0.168)	(0.069)	(-1.081)	(-0.492)	(0.187)	(-0.791)
INDB	+/-	0.014	0.045 *	-0.020 **	0.027 *	0.077 ***	-0.030 ***
		(0.579)	(1.565)	(-2.157)	(1.342)	(3.082)	(-4.260)
SIZE	?	-4.1E-04	0.020 **	0.003	-0.007	0.011	-0.005 **
		(-0.054)	(2.270)	(1.203)	(-1.052)	(1.464)	(-2.252)
DEBT	?	0.009	-0.108 ***	-0.023 **	0.026	-0.014	0.013 **
		(0.343)	(-3.621)	(-2.362)	(1.204)	(-0.539)	(1.733)
PPE	-/+	-0.048 **	-0.090 ***	0.019 **	0.001	0.009	0.002
		(-1.958)	(-3.201)	(2.095)	(0.067)	(0.355)	(0.322)
ROA	-/+	-1.217 ***	-1.228 ***	0.257 ***	-0.756 ***	-0.850 ***	0.344 ***
		(-17.935)	(-15.768)	(10.146)	(-13.989)	(-12.867)	(18.341)
GRA	-/+	-0.002 *	-0.004 **	0.001	0.001	-0.002	-0.001
		(-1.359)	(-2.202)	(1.206)	(0.153)	(-0.286)	(-0.529)
R&D	-/+	0.290 ***	-0.169 *	-0.119 ***	0.137 *	0.151 *	-0.051 *
		(2.594)	(-1.315)	(-2.867)	(1.481)	(1.341)	(-1.587)
EQINC	-/+	-1.409 ***	-2.600 ***	0.684 ***	-0.369 *	-0.278	0.486 ***
		(-3.365)	(-5.412)	(4.388)	(-1.459)	(-0.899)	(5.538)
TENURE	-/+	-0.001 ***	-0.001 **	-2.2E-04	-0.001 *	-0.001	0.001 ***
		(-2.500)	(-1.783)	(-0.990)	(-1.292)	(-1.146)	(3.262)
BIG4	+/-	0.029 **	0.067 ***	-0.010 **	0.023 **	0.044 ***	-0.007 **
		(1.993)	(4.039)	(-1.891)	(1.902)	(2.934)	(-1.765)
INDUSTRY		YES	YES	YES	YES	YES	YES
N		2008	2008	2008	2187	2187	2187
Adj. R2 (%)		0.184	0.149	0.132	0.134	0.111	0.231
F Value		12.041 ***	9.593 ***	8.444 ***	9.029 ***	7.506 ***	16.633 ***

Note: 1. The definition of various variables is shown in Table 2.

2. ***, ** and * Indicate statistical significant at the 1%, 5% and 10%, respectively.

3. Industry dummies have been put in the model analysis (indicated with INDUSTRY), but they have not been listed one by one.

powerful argumentation to restrict audit client's tax avoidance and the supervising function cannot be manifested.

In terms of control variable, the correlation coefficients between PPE and three variables of tax avoidance show the significant level before the adoption of IFRSs and the direction is in line with the expectation. But after the adoption of IFRSs, they have not reached the significant level. The reason is inferred that after the tax benefit clause was abrogated in 2010, the tax deduction amount can still be deferred for 5 years, but firms have completed its use year by year and the system of IFRSs increases the regulation of decommissioning costs that will cause book and tax differences. After the adoption of IFRSs, INDB is significantly positively correlated to CETR and their correlation is not significant before the adoption of IFRSs, which shows that the independent director's function of supervising tax avoidance has been intensified after the adoption of IFRSs.

6 Sensitivity analysis

6.1 The effect of the tax law amendment

The implementation of IFRSs has increased the book-tax differences. Government's tax policies and regulations will also respond to the change in difference to successively execute the law amendment procedure. Taiwan's Ministry of Finance amended the decrees related to tax in April 2014, which also reflects the problem related to the implementation of IFRSs. In face of the amendment in decrees and due to the increasing familiarity with the situation after the implementation of IFRSs, will the attitudes of firms and auditors be reflected in the effects of tax avoidance? Therefore, this research tries to extend the samples to the materials in 2015, so as to retest the effect on tax avoidance after the implementation of IFRSs and the effect of auditors on audit client's attitude towards tax avoidance and compare the main empirical difference of this research.

The empirical results are shown in Table 7 (the table of Correlation between auditor industry specialization and client importance characteristic and tax avoidance not shown) and they are the same as the test results of samples from 2011 to 2014 in the main empirical research, which shows that the empirical analysis results have not been affected by the time delay. Namely, it shows that after the IFRSs are adopted and it is extended to 1 year after the law amendment, firms are still positive in tax avoidance. The auditors having the higher auditor industry specialization continuously increase their assistance in audit client's

Table 7: IFRSs, auditor and tax avoidance
(distinguishing the samples before and after the implementation of IFRSs)

Variables	Expected direction EIR/BTD	Before the implementation of IFRSs(2011-2012)			After the implementation of IFRSs(2013-2015)		
		BETR	CETR	BTD	BETR	CETR	BTD
INTERCEP		0.343***	0.210***	-0.035**	0.296***	0.182***	0.008
		(7.187)	(3.829)	(-1.981)	(9.245)	(4.579)	(0.794)
EXPERT	-/+	-0.044**	-0.032	0.006	-0.034**	-0.043**	0.004
		(-1.983)	(-1.269)	(0.766)	(-2.264)	(-2.330)	(0.903)
IMP	+/-	0.001	0.071**	-0.027**	3.6E-0.4	0.028	-0.015**
		(0.034)	(1.753)	(-2.067)	(0.015)	(0.915)	(-1.885)
COMM	+/-	-0.002	0.001	-0.006	0.003	0.002	-0.005***
		(-0.168)	(0.069)	(-1.081)	(0.412)	(0.183)	(-2.376)
INDB	+/-	0.014	0.045*	-0.020**	0.037**	0.090***	-0.030***
		(0.579)	(1.565)	(-2.157)	(2.154)	(4.225)	(-5.328)
SIZE	?	-4.1E-04	0.020**	0.003	-.0002	0.010	-0.004***
		(-0.054)	(2.270)	(1.203)	(-0.487)	(1.620)	(-2.665)
DEBT	?	0.009	-0.108***	-0.023**	0.015	-0.018	0.015**
		(0.343)	(-3.621)	(-2.362)	(0.847)	(-.0787)	(2.485)
PPE	-/+	-0.048**	-0.090***	0.019**	0.005	0.021	-3.6E-05
		(-1.958)	(-3.201)	(2.095)	(0.314)	(1.021)	(-0.007)
ROA	-/+	-1.217***	-1.228***	0.257***	-.0848***	-1.004***	0.265***
		(-17.935)	(-15.768)	(10.146)	(-17.909)	(-17.137)	(17.310)
GRA	-/+	-0.002*	-0.004**	0.001	-0.002	-0.012*	0.002
		(-1.359)	(-2.202)	(1.206)	(-0.268)	(-1.426)	(0.690)
R&D	-/+	0.290***	-0.169*	-0.119	0.106*	0.157**	-0.033*
		(2.594)	(-1.315)	(-2.867)	(1.391)	(1.663)	(-1.331)
EQINC	-/+	-1.409***	-2.600***	0.684***	-0.541**	-0.724**	0.587***
		(-3.365)	(-5.412)	(4.388)	(-2.169)	(-2.343)	(7.270)
TENURE	-/+	-0.001***	-0.001**	-2.2E-04	-0.001**	-3.9E-04	3.1E-04***
		(-2.500)	(-1.783)	(-0.990)	(-1.758)	(-0.867)	(2.592)
BIG4	+/-	0.029**	0.067***	-0.010**	0.020**	0.040***	-0.007**
		(1.993)	(4.039)	(-1.891)	(1.991)	(3.177)	(-2.271)
INDUSTRY		YES	YES	YES	YES	YES	YES
N		2008	2008	2008	3299	3299	3299
Adj.R^2(%)		0.184	0.149	0.132	0.136	0.124	0.180
F Value		12.041***	9.593***	8.444***	13.363***	12.074***	18.179***

Note: 1. Various variables are defined in Table 2.
     2. ***, ** and * Indicate statistical significant at the 1%, 5% and 10%, respectively.
     3. Industry dummies have been put in the model analysis (indicated with
        INDUSTRY), but they have not been listed one by one.

tax avoidance after the law amendment. In terms of audit client's importance, auditor's supervising function for important clients still presents the declining trend.

In conclusion, the additional test conducted during the period of sample extension has the same conclusion with the main empirical research of this paper, which shows that the law amendment of governmental agencies will not affect the attitude of firms and auditors towards tax avoidance. Therefore, this research infers that it may be caused by the insufficient amendment range of laws and regulations. For instance, profit and loss recognition method of construction industry, only the costs recovery method is added, but it does not fully comply with the revision of IFRSs. The amendment of tax laws should be applicable to all the firms, because only listed and OTC firms adopt IFRSs during the law amendment. Thus, the amendments of tax laws and regulations did not achieve comprehensiveness, that is, new tax laws and regulations could not covered the book-tax differences arising from IFRSs. Therefore, the governmental advocacy and law amendment in 2014 after the implementation of IFRSs in 2013 have not alleviated the firms' tax avoidance caused by book-tax difference.

7   Conclusion

Taiwan's listed and OTC firms have formally adopted IFRSs to prepare the financial statements since 2013 and the change in accounting principles also increases the difference in financial accounting and tax. Thus, it will provide the opportunity to firms in tax avoidance. This research takes the listed and OCT firms audited by audit firms during the period from 2011 to 2014 as the research subjects to discuss firms' change in tax avoidance activities after the adoption of IFRSs. Moreover, aimed at the 2 factors of auditor industry specialization and audit client's relative importance, audit firm is used as the measurement basis to discuss whether it has the impact on firms' tax avoidance activities and further discuss whether the impact of the 2 auditor characteristics on audit client's tax avoidance activities changes before and after the adoption of IFRSs.

According to the empirical results of this research, it is found that the ETR decreased and the BTD increased after the enterprises adopt IFRSs, showing that firms will further engage in tax avoidance by means of the adoption of IFRSs. Secondly, this research discusses the relationship between auditor industry specialization and audit client's importance and audit client's tax avoidance. The empirical results show that if the degree of auditor industry specialization is higher,

it will have the helping effect on audit client's tax avoidance. After the comparison of the situation before and after the adoption of IFRSs, it is found that after the adoption of IFRSs, there are more sufficient evidences showing that the industry specialist auditors will rely on their industry specialization ability to continuously help the audit client with the tax avoidance, which conforms to the economic dependence hypothesis. In terms of audit client's importance, when the audit clients are more important to audit firms, auditors will be based on their reputation to supervise audit client's aggressive tax avoidance. But after the comparison of the situation before and after the adoption of IFRSs, it is found that after the adoption of IFRSs, auditor's restriction effect on audit client's tax avoidance declines, which implies that when firms are faced with the opportunity for tax avoidance, their initiative in tax avoidance will alleviate auditor's strength to restrict the tax avoidance and auditor's supervision function will be impeded. However, on the whole, auditors still have the supervision effect to alleviate client's tax avoidance to important client, which is in line with the inference of reputation hypothesis. The tax rate of Taiwan's profit-seeking firm income tax has changed for several times, so this research fails to expand the samples; meanwhile, Taiwan has not forced the firms to publish the audit fees, so this research fails to obtain the audit fee materials. Thus, audit fee cannot be used as the proxy variable in client importance and this is the limitation of this research.

Under the current Taiwan's environment, the change in accounting principles has increased the book-tax difference and it will increase firms' space for tax avoidance, which goes against the tax equity. In terms of the book-tax difference produced after the adoption of IFRSs, the national government should consider amending the laws earlier to alleviate book-tax difference without seriously affecting the direction of fiscal policy to reduce the space for tax avoidance. Moreover, auditors are affected by economic incentive and reputation protection in audit strategy. In face of the adoption of IFRSs, the auditors are more closely positive correlated to audit client's tax avoidance activities, which show that auditor's independence must be tested. Therefore, the misgiving for auditor's independence deserves the in-depth exploration in the future researches. Therefore, it is the future striving direction to alleviate book-tax difference and intensify auditor's independence to ensure the principle of fair taxation and sound auditing market.

References

[1] Altman, D. G., and Bland, J. M. Bland. Interaction revisited: the difference between two estimates. British Medical Journal, 326, (2003), 219.

[2] Balsam, S., J. Krishnan, and J. S. Yang, Auditor industry specialization and earnings quality. AUDITING: A Journal of Practice & Theory, 22(2), (2003), 71-97.

[3] Beneish, M. D., and T. L. Yohn, Information friction and investor home bias: A perspective on the effect of global IFRS adoption on the extent of equity home bias. Journal of Accounting and Public Policy, 27(6), (2008), 433-443.

[4] Blouin, J., Defining and measuring tax planning aggressiveness. National Tax Journal, 67(4), (2014), 875–900.

[5] Bonner, S. E., Z. Palmrose, and S. M. Young, Fraud type and auditor litigation: An analysis of SEC Accounting and Auditing Enforcement Releases. The Accounting Review, 73(4), (1998), 503-532.

[6] Braga, R. N., Effects of IFRS adoption on tax avoidance.Revista Contabilidade & Finanças - USP, 28(75), (2017), 407-424.

[7] Brown, J., The spread of aggressive corporate tax reporting: A detailed examination of the corporate-owned life insurance shelter. The Accounting Review, 86(1), (2011), 23–57.

[8] Chan, K. H., Lin, K. Z., and Mo, P. L. L., Will a departure from tax-based accounting encourage tax noncompliance? Archival evidence from a transition economy. Journal of Accounting and Economics, 50(1), (2010), 58-73.

[9] Chen, C. C., The influence of uncertain tax positions on tax Compliance: considering Taiwan's business income tax. NTU Management Review, 24(1), (2013), 285-319.

[10] Chen, M. C., The determinants of effective tax rates of profit-seeking firms. The International Journal of Accounting Studies, 34, (2002), 57-75.

[11] Chen M. C., and L. W. Tsai, Determinants of book-tax income differences and estimation of taxable income. Journal of Management and Business Research, 23(6), (2006), 739-763.

[12] Chen, S., X. Chen, Q. Cheng, and T. Shevlin, Are family firms more taxaggressive than non-family firms? Journal of Financial Economics, 95(1), (2010), 41-61.

[13] Chun K. H., W. Qiang and H. Zhang, Is Corporate Social Responsibility (CSR) Associated with Tax Avoidance? Evidence from Irresponsible CSR Activities. The Accounting Review, 88(6), (2013), 2025-2059.

[14] Chung, H., and S. Kallapur, Client importance, nonaudit services, and abnormal accruals. The Accounting Review, 78(4), (2003), 931-955.

[15] DeAngelo, L. E., Audit size and audit quality. Journal of Accounting and Economics, 3, (1981), 183-199.

[16] Desai, M. A., and D. Dharmapala, Tax and corporate governance: An economic approach. Max Planck Institute Studies on Intellectual Property, Competition and Tax Law, 3(1), (2008), 13-30.

[17] Dhaliwal, D. S., C. A. Gleason, and L. F. Mills, Last-chance earnings management: Using the tax expense to meet analysts' forecasts. Contemporary Accounting Research, 21(2), (2004), 431-459.

[18] Ding, Y., and X. Su, Implementation of IFRS in a regulated market. Journal of Accounting and Public Policy, 27, (2008), 474-479.

[19] Dopuch, N., and D. A. Simunic, The nature of competition in the auditing profession: A descriptive and normative view. In Regulation and the Accounting Profession, (1980), 77-94.

[20] Dyreng, S., M. Hanlon, and E. Maydew, Long-run corporate tax avoidance. The Accounting Review, 83, (2008), 61-82.

[21] Erle, B., Tax risk management and board responsibility. Tax and Corporate Governance, (2008), 205-220.

[22] Frank, M. M., L. J. Lynch, and S. O. Rego, Tax reporting aggressiveness and its relation to aggressive financial reporting. The Accounting Review, 84(2), (2009), 467-496.

[23] Freedman, J., Tax and corporate responsibility. Tax Journal, 695(2), (2003), 1-4.

[24] Freeman, R. E., and D. L. Reed, Stockholders and stakeholders: a new perspective on corporate governance. California Management Review, 25(3), (1983), 88–106.

[25] Gallemore, J., Maydew, E. L., and J. R. Thornock, The reputational costs of tax avoidance and the under-sheltering puzzle. Working paper, the University of North Carolina, (2012).

[26] Graham, J. R., and A. L. Tucker, Tax shelters and corporate debt policy. Journal of Financial Economics, 81(3), (2006), 563-594.

[27] Graham, J. R., M. Hanlon, T. Shevlin, and N. Shroff, Incentives for tax planning and avoidance: evidence from the field. The Accounting Review, 89(3), (2014), 991-1023.

[28] Gupta, S. and K. Newberry, Determinants of the variability in corporate effect tax rates: evidence from longitudinal data. Journal of Accounting and Public Policy, 16, (1997), 1-34.

[29] Hanlon, M., and S. Heitzman, A Review of Tax Research. Journal of Accounting and Economics, 50(2-3), (2010), 127-178.

[30] Haverals, J., IAS/IFRS in Belgium: quantitative analysis of the impact on the tax burden of firms. Journal of International Accounting, Auditing and Taxation, 16(1), (2007), 69-89.

[31] Huang, M. J., The effect of book-tax differences on audit selection of national tax administration. The International Journal of Accounting Studies, 50, (2010), 23-55.

[32] Huang, M. J., and S. M. Lin, Tax evasion and audit selection. The International Journal of Accounting Studies, 48, (2009), 35-66.

[33] Hunt, A. K., and A. Lulseged, Client importance and non-big 5 auditors' reporting decisions. Journal of Accounting and Public Policy, 26(2), (2007), 212-248.

[34] Johnson, P. E., K. Jamal, and R. G. Berryman, Effects of framing on auditor decisions. Organization Behavior and Human Decision Processes, 50(1), (1991), 75-105.

[35] Karampinis, N. I., and D. L. Hevas, Effects of IFRS adoption on tax-induced incentives for financial earnings management: evidence from Greece. The International Journal of Accounting, 48(2), (2013), 218-247.

[36] Krishnan, G. V., Does big 6 auditor industry expertise constrain earnings management? Accounting Horizons, 17 (Supplement), (2003), 1-16.

[37] Landry, S., M. Deslandes, and A. Fortin, Tax aggressiveness, corporate social responsibility, and ownership structure. Journal of Accounting, Ethics & Public Policy, 14(3), (2013), 611-645.

[38] Landsman, W. R., E. L. Maydew, and J. R. Thornock, The information content of annual earnings announcements and mandatory adoption of IFRS. Journal of Accounting and Economics, 53(2), (2012), 34-54.

[39] Lanis, R. and G. Richardson, The effect of board of director composition on corporate tax aggressiveness. Journal of Accounting and Public Policy, 30(1),

(2011), 50-70.

[40] Lietz, G. M., Tax avoidance vs. tax aggressiveness: A unifying conceptual framework. Working paper, University of Münster, (2013).

[41] Lin, G. N., The effects of auditor industry specialization, audit fees on the tax planning. Soochow Journal of Accounting, 7(1), (2017), 51-88.

[42] Lys, T. and R. L. Watts, Lawsuits against auditors. Journal of Accounting Research, 32, (1994), 65-93.

[43] Martins, A., An increasing rift between tax and book income after the introduction of IFRS in Portugal. Journal of Modern Accounting and Auditing, 7(2), (2011), 111-124.

[44] Maydew, E., and D. Shackelford, The changing role of auditors in corporate tax planning. In: Auerbach, A., Hines, J., Slemrod, J., (Eds.) Taxing Corporate Income in the 21st Century. New York: Cambridge University Press, (2007), 307-337.

[45] McGuire, S. T., T. C. Omer, and D. Wang, Tax avoidance: Does tax-specific industry expertise make a difference? The Accounting Review, 87(3), (2012), 975-1003.

[46] Mills, L., Book-tax differences and internal revenue service adjustments. Journal of Accounting Research, 36, (1998), 343–356.

[47] O'Reilly, M. Dennis, and J. T. Reisch, Industry specialization by audit firms: What does academic research tell us? Ohio AUDIT Journal, 61(3), (2002), 42-44.

[48] Palmrose, Z., Audit fees and auditor size: Further evidence. Journal of Accounting Research, 24(1), (1986), 97-110.

[49] Phillips, J., M. Pincus, and S. O. Rego, Earnings management: New evidence based on deferred tax expense. The Accounting Review, 78(2), (2003), 491-521.

[50] Prochazka, D., and J. Molín, Book-tax conformity: The review of recent research and its implication for the IFRS adoption in Europe. Journal of Tax Research, 14(1), (2016), 96-118.

[51] Rego, S. O., Tax-avoidance activities of U.S. multinational corporations. Contemporary Accounting Research, 20(4), (2003), 805-833.

[52] Rego, S. O., and R. Wilson, Equity risk incentives and corporate tax aggressiveness. Journal of Accounting Research, 50(3), (2012), 775-810.

[53] Reynolds, J. K., and J. R. Francis, Does size matter? The influence of large

clients on office-level auditor reporting decisions. Journal of Accounting and Economics, 30(3), (2000), 375-400.

[54] Richardson, G., G. Taylor and R. Lanis, The impact of board of director over sight characteristics on corporate tax aggressiveness: An empirical analysis. Journal of Accounting and Public Policy, 32, (2013), 68-88.

[55] Shafer, W. E., R. E. Morris, and A. A. Ketchand, The effects of formal sanctions on auditor independence. Auditing: A Journal of Practice & Theory, 18(2), (1999), 85-101.

[56] Solomons, D., The politicization of accounting. Journal of Accountancy, 146(5), (1978), 65-73.

[57] Wei, C. Y., and L. Chen, Auditor industry expertise and clients' tax avoidance: evidence from China. NTU Management Review, 26 (2), (2016), 1-36.

[58] Wilson, R. J., An examination of corporate tax shelter participants. The Accounting Review, 84 (3), (2009), 969–999.

[59] Zhang G. B., S. H. Fan, Tax impact and uncertainty caused by integration of IFRS into financial industry. Accounting Research Monthly, 300, (2010), 96-99

[60] Zimmerman, J. L., Taxes and firm size. Journal of Accounting and Economics, 5(2), (1983), 119-149