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Effect of Auditor's Simultaneous Audit and Tax Services and Tax-service Fee on Firm Value: Korea's Evidence

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Abstract

The purpose of this research is to examine the effect of the audit offer and simultaneous tax services from auditors on the firm value of clients. To test this hypothesis, we used the samples of the auditors' tax services selected from firms listed on the securities markets of Korea. We use the methodology of regression analysis. The major findings are as follows. First, TAX_SER has a positive relationship with the firm value. The knowledge and experience resulting from the offer of audit services are applied to the process of offering tax services to enhance the professionalism of audit and tax services. Second, the analysis was performed to determine if the type of tax services from auditors and the type of listed markets make any difference in the effect of TAX_SER1 on TQ; the study has revealed that only tax adjustment has a positive effect on TQ in the type of tax services. Depending on the type of listed markets, TAX_SER1 has been found to have a differential effect on the firm value. The results show that investors might decide to invest in those firms where the auditor could increase the firm value through audit and tax services.

Keywords : Non-Audit Service, Auditor-Provided Tax Services, Firm Value

JEL Classification Code: H2, H21, H25, H26

1. Introduction

Accounting information is needed to conduct reasonable decision-making, streamline the business activities of managers for improved efficiency, and help external interested parties in determining rationally any economic decision-making. Accordingly, distorted accounting information not only inflicts damages on investors, boards of directors, and employees, but also transforms such dealers into creditors and suppliers who suffer losses that affect sovereign credit rating and corporate credit. For this reason, manipulation and distortion of accounting information may cause a serious problem to the national economy.

The typical cases of this problem are accounting frauds that Korean firms, such as the Daewoo Group, Dong-A Construction, and SK Global, commit and the window-dressing that Enron, MCI, Worldcom, and Lucent Technology practice. With this series of incidents, a suspicion was raised with regard to the proper auditing performance of officials, the interest in improvement plans for an audit system, and the reliability of accounting. In relation to these issues, auditors who offer non-audit and audit services have been the subject of dispute; thus, the regulatory authorities of each country have recently determined that the quality of audit may have deteriorated because the non-audit services supplied by an auditor lead to the increased economic dependency of client firms that eventually causes the risk of self-audit. As a result, the law specifies the legal regulations against certain non-audit services with a high risk of self-audit¹.

By contrast, the firm value will generally increase when any firm reserves investment opportunities through the effective utilization of its asset or investments in the research and development of technology, the future growth potential of which is very high or holds many intangible assets, such as technological prowess. These assets facilitate profit creation, which is the purpose of firms' business. Therefore,

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the profit of a firm can be directly linked to the firm value. However, the net profit that the firm earns will become after-tax profit and not pre-tax one because the amount paid to the government as a tax cost commands a considerable rate of the profit that the firm earns. Consequently, the firm will try to reduce its tax cost to maximize its after-tax profit (Koh, Kim & Choi, 2007). The firm will seek the help of tax experts because the elaborate strategy of the firm serves a critical function in its development.

Thus, the firm value has a direct relation with its tax burden. The firm value establishes elaborate strategies to reduce tax cost that could maximize the firm profit and minimize the tax burden. Similarly, the tax cost is reduced because the strategic tax planning of the company manager has a positive effect on the firm value. On the contrary, the increased level of tax burden will increase the tax amount and reduce the disposable income. Thus, the firm will try to reduce the tax amount to be paid, for which the firm requires such non-audit service as tax adjustment from auditors. Therefore, the tax services offered to the firm by auditors can have a significant effect on the firm value.

Brown and Caylor (2006) reported that the firm value would appreciate in proportion to the increase of the tax-service fee when the firm obtains the audit and tax services from auditors. At the same time, the market participants perceive the knowledge transfer between tax field and auditing sector. Thus, the firm value may appreciate. Similarly, Lasilla et al. (2010) argued that the tax service to the firm with excellent governance structure has a significantly positive relation to the firm value. Nevertheless, advanced studies have been mostly about the effect of auditor's tax services on audit quality or the quality of profit. Thus, the research of the effect on firm value of auditor's tax service has been insufficient to date. Moreover, the results are consistent. However, the argument that the offer of an auditor's services has a positive effect on firm value has been often reported to have a negative effect or no significant relationship. This aspect has not been given attention in domestic studies. In addition, this concept has not been actively studied despite the fact that tax services are rated the highest among the non-audit services that auditors offer to the listed companies; research on this topic is limited (Kwak, 2014).

Therefore, this study seeks to verify the effect of the offer of auditor's tax services on firm value. The following identifies the differences between this study and the other ones.

First, existing studies examined tax avoidance and earnings management based on cases where the tax services are mostly offered by auditors. Thus, few studies have verified the relationship between tax-service offer and firm value. Accordingly, this study verified the effect of auditor's tax services, the amount of fee paid for the offer, and the rate of the tax service fee on the firm value.

Second, the effect of each service characteristics, which is one of the limitations mentioned by previous studies, was examined because it entails an analysis of the nature of tax service as one among the offered non-audit services².

The structure of the article is as follows. Chapter 2 reviewed the literature. Chapter 3 presents the research hypothesis and explains the empirical analysis through the study design along with the description of sample selection. Chapter 4 presents the results of empirical analysis as well as their interpretation. Chapter 5 summarizes, concludes, and points to the limitations.

2. Review of relevant literature

Compared with the studies on the effect of auditor's tax-service offer on earnings management, studies on firm value have not been actively pursued. Moreover, findings from previous studies are inconsistent. However, more researchers have stated that auditor's tax-service offer has a positive effect on firm value, which runs counter to the idea of those who argue that this offer has a negative effect on the value or that no significant relationship between the two exists. In addition, domestic research on this aspect is insufficient. The following are previous major studies regarding this aspect.

Mahdi et al. (2013) reported that tax policy must be part of fiscal policy and linked with other economic policies. The whole tax policies could be considered as policies to increase mobility, dynamism and movement of community towards development. Fortin and Pittman (2008) selected samples from US firms to conduct a comparative study on the bond spread between the firms that receive auditor's tax service and those that do not, and revealed that the former shows a high bond spread, which implies that the value of the former is negatively estimated in markets. Oh and Ki (2020) reported that the Korean corporate tax system linked to financial accounting (one book system) is appropriate for examining managerial decisions on tax burden by accounting choice. Also, it offers a better research setting to examine the propensity of analysts to provide a forecast on tax-related information and its incremental impact on value relevance.

Nguyen (2019) reported that tax could represent a potential and regular source of revenue that government's spending needs. Park et al. (2010) employed the difference between account benefit and taxable income to analyze the relationship between the auditor's independent and the effect of non-audit service on firm value. They found that a cause-and-effect relationship between the two concepts, which states that the firm with more non-audit services suffers a negative effect on its value. Brain (2010) studied the relationship between tax-service fee and firm value using the object-samples from US firms and determined

that the latter increases as the former increases, indicating that market participants acknowledge the phenomenon of transfer between tax field and audit field to regard highly the firm value.

Lasilla et al. (2010) reported that the more complicated the tax business and sales business of the firm, the better the governance structure, and the more tax-adjustment service is required from auditors. In other words, they argued that the tax service from auditors in the firm that has an excellent governance structure results in a significantly positive influence on firm value. Furthermore, when auditors' services are offered to the firm with complex tax and sales businesses as well as a more excellent governance structure, another significantly positive relation exists. Thus, the benefit from the knowledge transfer is more highly appreciated than the concern about the possible loss of independence when auditors perform and handle tax affairs simultaneously.

Park and Kim (2012) investigated the firms listed in the domestic securities market to analyze the effect of the tax-avoidance tendency by introducing the audit committee and auditor's tax adjustment on the firm value. In all of the samples, the tax-avoidance tendency has a negative effect on firm value. By contrast, the tax-avoidance tendency of the firm that adopted an audit committee has a significantly positive relation with the firm value. Analysis was performed on samples that were classified into firms with and without audit committees and those that offer and do not offer auditors' tax-adjustment services. Results showed that the tax-avoidance tendency of firms with the audit committee and auditors' tax-adjustment service has a significantly positive relationship with firm value. The researchers reported that managers might take advantage of this result to seek private benefits, which may negatively affect the firm value. However the tax-avoidance tendency may have a significantly positive relationship with firm value if the adoption of the audit committee can control the discretionary inclination of the managers and properly reduce the negative effect of independence impediment through auditors' tax adjustment to allow knowledge transfer to improve the positive effect for enhancing professionalism.

The review of previous studies revealed conflicting arguments on the capability of the improvement of audit quality resulting from the positive synergy effect of tax services offered by auditors to make tax services helpful to executing audit at audit fees. In addition, some studies suggested that offering tax services has a positive relationship with firm value, whereas others argued that no correlation exists. Some research maintains that non-audit services may have a negative relationship depending on their types.

3. Research Design

In this chapter, the research hypotheses are established based on the objectives of this study and results of previous studies. A study model, which is composed of measured variables, has been designed to verify these research hypotheses. The selection process of research samples is described.

3.1. Establishment of Research Hypotheses

In general, the value of the firm increases when the firm reserves investment opportunities through effectively utilization of its asset or investing in research and technology development that has a high future growth potential or many intangible assets, such as technological prowess.

This kind of value is closely related to the tax burden of the firm. Concretely speaking, the firm tries to maximize its profit through planning and establishing elaborate tax strategies for tax-cost reduction that can minimize the tax burden. Similarly, firm value is positively affected when these strategic tax plans lead to the reduction of the tax cost. By contrast, a firm will make efforts to reduce the tax amount to be paid because the tax amount due will increase. Moreover, the disposable income will decrease by the same amount when the level of tax burden increases. For this reason, firms will seek non-audit services from auditors, such as tax adjustment.

Moreover, the audit and tax services of auditors may result in the synergy effect from these fields because the tax burden on the firm is determined through the process of calculating the book reporting and tax reporting earnings. Consequently, a positive effect on disclosure quality that is related to corporate tax and the tax burden of the firm may be positively affected. As a result, a positive relationship between the audit and tax services of the auditors and firm value is anticipated because the minimization of tax burden through both the audit and tax services of auditors and their purchase is predicted to have a positive effect on firm value.

Brown and Caylor (2006) identified the relation between the tax-service fee paid to auditors and the firm value. They found that the increase in tax-service fee increases the firm value when the firm receives both the audit and tax services from auditors at the same time. Thus, market participants deem firm value highly through the recognition of knowledge-transfer between the fields of tax and audit. Park and Kim (2012) investigated the firms listed in the domestic securities markets to estimate the effect of tax-avoidance inclination through the adoption of an audit committee and auditor's tax adjustment on the firm value. They found that the tax-avoidance tendency of the firms that have an audit committee has a significantly positive relationship with the firm value. Eventually, they argued that if the adoption of

audit committee was intended to control the discretionary propensity of the managers, properly alleviate the negative effect of independence impediment through auditors' tax-adjustment service, and create a positive effect for the improvement of professionalism, then the tax-avoidance inclination might have a significantly positive relationship with the firm value.

To summarize the results described above, the dividend of stockholders from the profit of the firm is expected to increase, and an aggressive financial reporting with the reduction of any conservative activities may enlarge the accounting report profit because the simultaneous tax service of auditors can reduce the cash flow for tax cost through the reduction of tax burden. Accordingly, participants in capital markets anticipate this result to influence the estimation of firm value positively. Hence, by anticipating that auditors' simultaneous offer of tax service may have a positive relationship with the firm value, the present study established Hypothesis 1. Hypothesis 2 was established to analyze empirically what affects the rate of the tax-service fee and the total fee for audits paid by the firm receiving tax service. Moreover, the hypothesis was formulated to investigate the effect of tax-service fee on the firm value.

Hypothesis 1: Simultaneous audit service and tax service by auditors has a positive relationship with firm value.

Hypothesis 2: Tax-service fee paid to auditors offering audit service and tax service has no effect on firm value.

3.2. Measurement of Variables

The aim of this study is to expect to see the effect of an auditor's offering of tax service on firm value. Therefore, this study applied Tobin's Q (TQ) as a measure of firm value. The measurement of Tobin's Q was calculated according to the measuring method used by Shin et al. (2004), Park and Kim (2006), and Moon et al. (2006).

$$TQ_t = \frac{[Number\ of\ common\ stocks_t \times Closing\ price\ of\ common\ stocks_t] + (Number\ of\ preferred\ stocks_t \times Closing\ price\ of\ preferred\ stocks_t) + Book\ value\ of\ liabilities_t}{Book\ value\ of\ total\ assets_t} \quad (1)$$

The Tobin's Q indicates the rate of the market value of the firm in relation to asset-replacing cost. When the firm reserves an opportunity for investment with a positive net present value through the efficient utilization of assets or executes the investment for research and technology development that has a high growth potential or many intangible assets, such as brands and technological prowess, the corresponding firm value increases for the asset-replacing cost, and Tobin's Q also increases.

3.3. Study Model

To estimate the effect of the auditor's tax service on firm value, the following study model was formulated.

$$TQ_{it} = \alpha_0 + \beta_1 TAX_SER_{it} + \beta_2 BIGA_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 SIZE_{it} + \beta_6 OWN_{it} + \beta_7 OCF_{it} + \beta_8 AGE_{it} + \beta_9 RISK_{it} + \beta_{10} GRW_{it} + \beta_{11} \sum YEAR_{it} + \beta_{12} \sum IND_{it} + \varepsilon_{it} \quad (2)$$

Where company i in year t	
TQ	= Tobin's Q presents the firm value
TAX_SER1	= 1 if auditors provide tax services with audit service, 0 otherwise
TAX_SER2	= Natural log value of tax service fee which paid to auditor
TAX_SER3	= Tax service fee ratio of total audit fee which paid to auditor
BIG4	= 1 if auditor is BIG4, 0 otherwise
LEV	= Total liabilities/Total assets at prior year
ROA	= Net profit during the term/Total assets at prior year
SIZE	= Natural log value of total assets
OWN	= Major stockholder's ownership
OCF	= Cash flow for operation/Total assets at prior year
AGE	= Natural logarithm of the number of years since the establishment of the company
RISK	= Operating risk = (sales receivable + inventory assets) / total assets
GRW	= (Current sales-electricity sales) / electricity sales

In Formula (2), the firm receiving simultaneous tax services from auditors creates a large synergy effect of knowledge on accounting audit and taxation. Thus, this firm will be offered effective tax adjustment and taxation strategies when its tax burden and cash flow are naturally reduced to enable the increase of the cash in hand to increase and consequently improve liquidity. Therefore, the sign of β_1 is anticipated to show the positive value because the firm value is anticipated to be positively affected.

The tax services offered have been classified into three types to determine the differentiated effects of the auditors' tax services on firm value based on their types: only tax-adjustment service is offered (TAX_SER11), other services, except for tax-adjustment service, are offered (TAX_SER12), and both are offered (TAX_SER13). Based on this classification, the following study model was constructed.

3.4. Selection and Composition of Study Samples

The samples for this study that satisfy all of the following conditions were selected from firms listed in securities markets and KOSDAQ Stock Market from 2006 to 2011.

- (1) Listed firms that do not belong to the financial business sector
- (2) Firms whose accounts were closed in December
- (3) Firms that posted the data on audit fee and tax-service fee along with the status of non-audit service contracts in the business reports or the audit reports of electronic disclosure system
- (4) Firms whose financial data are available from the database of the Korea Listed Companies Association or Fn-Data Guide Pro

In relation to the selecting process of samples, the purpose of excluding financial business from Condition (1) is to apply the identical conditions for better comparability because its accounting statement form and the nature of its account titles may be different from those of the general manufacturing industry. Condition (2) is used to maintain the homogeneity of sample firms, and Conditions (3) and (4) are for used for the data sources to secure the data needed for the study model. In particular, the data on auditors' tax-service offer and tax-service's nature and fee were manually collected from business reports and audit reports on DART System of FSC. Based on the standard for selecting samples, 2,218 (firm–year) were selected as the final sample firms from 2006 to 2011 for the verification of the study hypotheses, whereas the samples supplying the auditors' tax services were 356 (firm–year)³ For the control of the outlier, 1% from the top and bottom of each variable applied to the final analysis were winsorized.

4. Results of Empirical Analysis

4.1. Descriptive Statistics of Variables

Table 1 shows the overall descriptive statistics of the variables employed for this study. Among the sample firms, the rate of purchasing tax service from auditors by firms (TAX_SER1) is 16.1%⁴, which suggests that except those that belong to the financial business sector, more than 80% of the sample firms listed in securities markets and KOSDAQ Stock Market have been receiving the tax services from third parties tax agents and not from auditors. Natural log value of tax-service fee paid to auditors (TAX_SER2) is 9.303 on average, and the average fee paid to auditors for tax services is 35,892 won. The rate of tax service fee out of the total audit-fee paid to auditors (TAX_SER3) is 0.007–0.259 with an average of 0.099. As a result, the firms that received the

tax services of auditors have spent approximately 9.9% out of the total audit fee earmarked for the actual tax service fee.

The measure of firm value is 1.143 on average with a distribution of 0.605–2.402. The average of BIG4 applied as a control variable is 58.3%, which means that a total of 1,293 firms were audited using BIG4. The debt ratio of sample firms (LEV) is 45.6%, and the total return-on-asset (ROA) is 9.4% on average, which indicates that the sample firms are those with satisfactory business performance and wholesome financial soundness. The average value of the largest stockholder's holdings (OWN) is 0.423, which reveals that the largest stockholders possess the share of 42.3%.

Finally, the averages of firm size (SIZE) and operation cash flow (OCF) are 18.791 and 0.074, respectively, whose medians are almost similar to each other. Other control variables are distributed similarly to those in previous studies. The descriptive statistics quantity of the other control variables is shown in Table 1.

4.2. Analysis of Correlation

The result of Pearson correlation analysis of the variables applied to the empirical analysis. TAX_SER1 and TQ are 0.063, which shows a positive correlation at the significant level of 1%. This result implies that the offer of tax

Table 1: Variable descriptive statistics

Variable	Sample Size	Means	Std Dev	Max	Median	Min
TQ	2,218	1.143	0.476	2.402	0.998	0.605
TAX_SER1	2,218	0.161	0.367	1.000	0.000	0.000
TAX_SER2	356	9.303	1.130	11.983	8.861	6.310
TAX_SER3	356	0.099	0.057	0.259	0.085	0.007
BIG4	2,218	0.583	0.493	1.000	1.000	0.000
LEV	2,218	0.456	0.231	1.163	0.440	0.061
ROA	2,218	0.094	0.078	0.370	0.076	0.001
SIZE	2,218	18.791	1.489	23.610	18.420	16.660
OWN	2,218	0.423	0.151	0.779	0.416	0.106
OCF	2,218	0.074	0.099	0.337	0.068	-0.179
GRW	2,218	0.163	0.211	1.112	0.113	-0.176
AGE	2,218	3.113	0.654	4.174	3.258	1.609
RISK	2,218	0.365	0.199	0.946	0.343	0.019

service from auditors has a positive effect on firm value. Furthermore, the correlation among key variables shows a correlation (Pearson correlation coefficient of 0.488) with high profitability (ROA) and operation cash flow (CFO). Such correlation confirms that the profits according to accrual basis and the operation cash flow through cash basis are closely related to each other.

The result of the analysis under the restrictive assumption that each variable is independent of one another, and thus cannot be concluded as accurate because the interaction effects among variables that decide the dependent variables are considered. In other words, the result could be different, and verifying such as well as the control variables through multivariate regression analysis is indispensable because the result is a simple correlation coefficient. Accordingly, the regression coefficients of each study model can be derived through regression analyses to verify the effect of different control variables on key interest variables synthetically.

4.3. Analysis of Average Difference of Key Variables

Table 2 shows the results of the analysis of the average difference among key variables. The size of TQ when auditors do not offer tax services increases when auditors offer such services. The increase from 1.130 to 1.212 is statistically significant at the significant level with an average value of 1%. This finding, as predicted, indicates the orientation that the simultaneous offer of tax service from the auditors has a positive relationship with the firm value. The average differences of the other control variables are shown in Table 2.

Table 2: T-test of variable

Variable	Auditors do not provide tax services	Auditors provide tax services	Means Difference	t value
	Means	Means		
TQ	1.130	1.212	-0.082	-2.96***
BIG4	0.557	0.716	-0.159	-6.00***
LEV	0.453	0.473	-0.020	-1.52
ROA	0.093	0.098	-0.005	-1.14
SIZE	18.697	19.285	-0.588	-5.58***
OWN	0.421	0.431	-0.010	-1.09
OCF	0.072	0.081	-0.009	-1.62*
GRW	0.162	0.170	-0.008	-0.64
AGE	3.115	3.098	0.017	0.42
RISK	0.367	0.354	0.013	1.10

Note 1) ***, **, * shows the significant level at 1, 5, and 10%, respectively (two-tailed test)

Note 2) Refer to the variable definitions

4.4 Regression Analysis

4.4.1. Effect of Auditors' Tax Service on Firm Value

Table 3 represents the results of the regression analysis, which estimates the effect of auditors' tax-service offer on firm value. The result indicates that the variable TAX_SER1, a variable of simultaneous offer of auditors' tax service, shows a statistically significant coefficient of 0.063 at the level of 5%, which supports Hypothesis 1. This result can be regarded as proof that the investors in capital markets positively responded to the effect created by the simultaneous offer of tax service from the auditors.

The utilization of knowledge and experience that the offer of audit services produced in the process of offering tax services may enhance the professionalism of the auditors' audit and tax services. Therefore, the simultaneous offering of auditors' tax service based on this level of professionalism may reduce the tax burden of firms.

As a result, the cash flow-out may decrease to finally generate the share to stockholders from the created profit of firms that have accumulated. At the same time, the

Table 3: Effect of auditors-provided tax service offer on firm value

$$TQ_{it} = \alpha_0 + \beta_1 TAX_SER_{it} + \beta_2 BIGA_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 SIZE_{it} + \beta_6 OWN_{it} + \beta_7 OCF_{it} + \beta_8 AGE_{it} + \beta_9 RISK_{it} + \beta_{10} GRW_{it} + \beta_{11} \Sigma YEAR_{it} + \beta_{12} \Sigma IND_{it} + \varepsilon_{it}$$

Variable	Coef.	t value	Coef.	t value	Coef.	t value
Intercept	1.458	5.76***	1.886	3.46***	1.921	3.51***
TAX_SER1	0.063	2.09**				
TAX_SER2			0.063	1.48		
TAX_SER3					0.252	0.49
BIG4	0.039	1.61	0.034	0.48	0.049	0.69
LEV	0.208	3.16***	0.042	0.24	0.055	0.31
ROA	2.381	12.46***	2.100	4.21***	2.104	4.20***
SIZE	0.030	3.14***	0.003	0.10	0.032	1.57
OWN	-0.470	-6.32***	-0.321	-1.73*	-0.350	-1.88*
OCF	0.394	2.87***	1.007	2.61***	1.035	2.67***
GRW	0.189	2.67***	0.369	2.03**	0.384	2.10**
AGE	-0.177	-9.07***	-0.213	-4.51***	-0.227	-4.86***
RISK	0.035	0.51***	-0.158	-0.83	-0.150	-0.79

Note 1) ***, **, * shows the significant level at 1, 5, and 10%, respectively (two-tailed test)

Note 2) Refer to the variable definitions

aggressive financial reporting of managers will probably increase the accounting report profit because the auditors are not likely to be relatively conservative with regard to earnings management of the managers. With this influence, the positive effect from the simultaneous offer of tax service is reflected on the valuation of firm value, which leads to the rise of firm value.

4.4.2. Effect of Auditor's Tax Service on Firm Value depending on Offer Type

Table 4 shows how differentially the effect of tax service that the auditors offer on the firm value depends on the offering type. For the analysis of the effect of each tax service on firm value, the types of tax services that auditors offer are classified into the following: only the tax-adjustment service is offered (TAX_SER11), the other tax services are offered, excluding the tax-adjustment service (TAX_SER12), and both are offered ((TAX_SER13). The analysis has revealed that both the (TAX_SER12) and (TAX_SER13) have no statistically significant result, whereas (TAX_SER11) has a positive correlation with the firm value that had the statistically significant figure of 0.057 at the level of 10%, which can mean that the tax adjustment service of auditors has a positive effect on the firm value.

Table 4: Effect of auditors-provided tax service type on firm value

$$TQ_{it} = \alpha_0 + \beta_1 TAX_SER11_{it} + \beta_2 TAX_SER12_{it} + \beta_3 TAX_SER13_{it} + \beta_4 BIGA_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 SIZE_{it} + \beta_8 OWN_{it} + \beta_9 OCF_{it} + \beta_{10} AGE_{it} + \beta_{11} RISK_{it} + \beta_{12} GRW_{it} + \beta_{13} \Sigma YEAR_{it} + \beta_{14} \Sigma IND_{it} + \varepsilon_{it}$$

Variable	Coef	t value
Intercept	1.466	5.74***
TAX_SER11	0.057	1.7*
TAX_SER12	0.095	1.43
TAX_SER13	0.046	0.41
BIG4	0.039	1.61
LEV	0.208	3.16***
ROA	2.381	12.46***
SIZE	0.029	3.01***
OWN	-0.469	-6.3***
OCF	0.396	2.88***
GRW	0.188	2.65***
AGE	-0.176	-8.99***
RISK	0.036	0.53

4.4.3. Effect of Auditor's Tax Service of Each Listed Market on Firm Value

Table 5 indicates the result of analyzing how differentially auditors' tax service reacts to firm value depending on the type of listed market. The analysis revealed that in KOSDAQ Stock Market, the key interest variable, TAX_SER1, did not show any statistically significant result; whereas TAX_SER1 show a coefficient of 0.070 in the securities markets, which is statistically significant at 5%. This finding implies that the firm value is high when auditors offer tax services in securities markets.

One of the firm's factor listed in the KOSDAQ Stock Market is the relative fall in demand for accounting audit and tax services of high quality compared with that of firms listed in securities markets because the reliability of the accounting information of the firms listed in KOSDAQ Stock Market is lower than that of firms listed in securities markets. As a result, it is possible that more positive effect on firm value is achieved when the firms receiving high quality audit and tax services, which are listed in securities markets, are offered the simultaneous audit and tax services, than when such services are offered to firms listed in KOSDAQ Stock Market. To conclude, the effect of auditors' tax service on firm value reacts differentially depending on the type of listed market.

Table 5: Effect of auditors-provided tax service on firm value according to listed market type

$$TQ_{it} = \alpha_0 + \beta_1 TAX_SER_{it} + \beta_2 BIGA_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 SIZE_{it} + \beta_6 OWN_{it} + \beta_7 OCF_{it} + \beta_8 AGE_{it} + \beta_9 RISK_{it} + \beta_{10} GRW_{it} + \beta_{11} \Sigma YEAR_{it} + \beta_{12} \Sigma IND_{it} + \varepsilon_{it}$$

Variable	Securities market		KOSDAQ market	
	Coef.	t value	Coef.	t value
Intercept	0.432	1.85*	1.321	2.75***
TAX_SER1	0.070	2.11**	0.061	1.16
BIG4	0.100	3.09***	0.021	0.59
LEV	0.532	6.14***	0.013	0.13
ROA	2.865	11.39***	2.109	7.63***
SIZE	0.044	4.13***	0.041	1.64
OWN	-0.467	-5.27***	-0.418	-3.4***
OCF	0.786	4.29***	0.159	0.81
GRW	-0.215	-2.28***	0.412	3.98***
AGE	-0.145	-6.29***	-0.159	-4.3***
RISK	0.141	1.49	-0.034	-0.35

4.5. Additional Analysis by Controlling for Endogeneity

To enhance the robustness of the result from the empirical analysis for Hypothesis 1, the endogeneity issue with the variable of auditor's simultaneous offer of tax service was first controlled through the execution of an additional analysis. In other words, this study employed the Heckman (1979) two-step method to double-check the result from Hypothesis 1 toward the removal of the selection bias of samples caused by the features of the firm, which affect the purchase of tax service from auditors.

As Step 1 of this method, the probit analysis was conducted to examine the determination factors in purchasing tax services from auditors, as shown in Formula (4).

$$TAX_SER1_{it} = \alpha_0 + \beta_1 AFEE_{it} + \beta_2 OWN_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \beta_5 BIGA_{it} + \beta_6 \sum YEAR_{it} + \beta_7 \sum IND_{it} + \varepsilon_{it} \quad (4)$$

In the model of Formula (4), the amount of audit fee (AFEE), which is related to the purchase of tax services from external auditors by the managers, is determined by what the auditors shoulder, such as their input time and audit risk. The OWN is a surrogate variable of the typical financial report cost. Managers may try to minimize their tax burden by maximizing the profit of internal stockholders rather than that of external ones because managers with high ownership rate contend with relatively less pressure from capital markets. Consequently, the largest stockholder's holdings may affect the purchase of tax services from auditors. LEV, which is related to the capital finance cost of the manager, may have an effect on the purchase of tax service. Large firms with huge business size (SIZE) will naturally have to take the burden of political expenses. Thus, emphasizing auditor's independence, which is stronger than an effective tax plan, affects the hiring of auditors as tax agents. Finally, BIG4 has a high quality because of the employment of more input time, more systemized training, and a more thorough review to attain a high quality of audit from a conservative angle. Accordingly, the size of auditors will have a relation with the offer of tax service besides audit service because the bigger size of auditors enhances the strong conservative tendency (Lee & Yun, 2011).

In Step 1, the probit analysis was executed to obtain the inverse Mills ratio (MILLS). In Step 2, MILLS was applied to the regression equation for the control of sample selection bias. For this reason, the variables of MILLS in Step 2, which were estimated using Formula (4), were applied to Formula (5), which is the model of hypothesis verification regression analysis for the execution of the regression analysis. If the verification result of Hypothesis 1 is found to be the same even after controlling MILLS, which is the sample selection bias variable, then this result can imply that

the tax service that actual auditors simultaneously offered by actual auditors, not the statistical error caused by sample selection bias, has an effect on the firm value.

$$TQ_{it} = \alpha_0 + \beta_1 TAX_SER_{it} + \beta_2 BIGA_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 SIZE_{it} + \beta_6 OWN_{it} + \beta_7 OCF_{it} + \beta_8 AGE_{it} + \beta_9 RISK_{it} + \beta_{10} GRW_{it} + \beta_{11} MILLS_{it} + \beta_{12} \sum YEAR_{it} + \beta_{13} \sum IND_{it} + \varepsilon_{it} \quad (5)$$

Table 6 shows the results of additional analysis, which considered endogeneity. TAX_SER1 of the analysis for the effect of auditors' tax service on firm value shows that the tax service offer from auditors is positively related to the firm value. Firm value is 0.048, which indicates a limited significant result.

5. Conclusions

The previous studies on non-audit services, which include tax services, have focused on the effect of auditors' service on the quality of audit and profit. These studies did not produce consistent research results. In other words, the understanding of this issue has two conflicting streams of thought. First, the offer of non-audit services from auditors degrades the audit service and increases the economic dependence of auditors or causes the risk of self-audit to damage the independence of auditors and deteriorates

Table 6 : Robustness test results

Variable	Variable	
	Variable	t value
Intercept	2.76	7.48***
TAX_SER1	0.048	1.60
BIG4	-0.048	-1.59
LEV	0.187	2.85***
ROA	2.386	12.55***
SIZE	-0.001	-0.1
OWN	-0.615	-7.69***
OCF	0.349	2.54**
GRW	0.185	2.63***
MILLS	-0.390	-4.81***
$\Sigma YEAR$	Included	
ΣIND	Included	
Adjusted R ²	0.300	
F-value	40.58***	
Sample size	2,218	

Note) ***, **, * shows the significant level at 1, 5, and 10%, respectively (two-tailed test)

the quality of accounting information. Second, the offer brings about better understanding of the client's business environment, business process, and the relevant industries of the client while enabling the knowledge acquired in the process of offering non-audit services. Such services are utilized or transferred to audit business to improve the quality of accounting information. Moreover, the results from the studies on the effect of TAX_SER1 on the tax burden and firm value of Korean companies are not consistent.

This study has empirically analyzed the effect of the audit offer and simultaneous tax services from auditors on the firm value of clients. The following are the key findings.

First, TAX_SER has a positive relationship with firm value. The knowledge and experience resulting from the offer of audit services is applied to the process of offering tax services to enhance the professionalism of audit and tax services. Accordingly, the simultaneous offer of tax services from auditors will reduce the tax burden of the firm and consequently reduce the cash flow-out, which eventually will increase the share of stockholders in the profit created by firms. Furthermore, an aggressive financial reporting of managers may lead to the increase of accounting report profit because auditors are not likely to be conservative in relation to earnings management. The simultaneous offer of tax services will create an effect, which is reflected on the evaluation of investors with regard to firm value. Eventually, the effect will lead to the rise of TQ.

Second, the additional analysis conducted to verify if the degrees of earnings management and tax burden make any difference in the effect of TAX_SER1 on TQ has revealed that TAX_SER1 significantly increases TQ while depending on the degree of earnings management. The offer of tax service to the firm with high cause for earnings management somewhat lessens the degree of the increase of TQ. However, the degree of tax burden did not make any difference in the effect of TAX_SER1 on TQ.

Third, the analysis performed to determine if the type of tax services from auditors and the type of listed markets make any difference in the effect of TAX_SER1 on TQ has revealed that only tax adjustment has a positive effect on TQ in the type of tax services. Depending on the type of listed markets, TAX_SER1 has been found to have differential effect on the firm value.

This study has the following implications.

First, the result of this study offers the external users of firm information the knowledge that could guide them in gaining a favorable evaluation of TQ when they make any decision on any investment into the firm because of the congruence between an audit corporation and a tax-service corporate.

Second, the non-audit service in Korea that is related to tax is believed to be more incapable of inflicting much

damage on the independence of auditors compared to other non-audit services, which can be performed simultaneously with audit services. Accordingly, the result on the effect of auditors' simultaneous offer of tax services on the TQ will be a political reason for supporting the existing provisions.

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Endnotes:

1. The inhibited non-audit services include (1) Services related to Book Keeping and Drawing-up of Accounting Book and other Financial Statements; (2) Designing and Operating the Financial Affairs Information System; (3) Reports on Value Appreciation, Opinion on Propriety, or Appraisal and Assessment; (4) Actuarial Service; (5) Outsourcing Service of Internal Audit; (6) Management Administration or Human Resource Management; (7) Broker, Dealer, Investment Adviser, Investment Bank Service; (8) Legal Service and Expert Service not relevant to Audit; and (9) other services inhibited by the committee
2. The effect of other tax services, except that of tax adjustment service, was analyzed as well because the effect of tax consultation, objection to the imposition, and support for tax investigation among tax services may be as significant as the tax adjustment service
3. Among the total samples of 356 that purchased tax services from auditors, 270 purchased only tax adjustment service, 64 purchased other tax services (tax consultation, objection to the imposition, and support for tax investigation) except for only tax adjustment service, and 22 purchased both services.
4. The rate of firms listed in securities markets purchasing tax services from auditors is 21.7% and that of those listed in KOSDAQ Stock Market is 11.4%.