INCENTIVE FOR ADOPTING THE CONSOLIDATED TAX RETURN SYSTEM, AND ITS RELATION TO CORPORATE GOVERNANCE, AND TAX AVOIDANCE: EVIDENCE FROM JAPAN

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Ohnuma, Hiroshi

Faculty of Commerce, Chuo university

CONSOLIDATED TAX RETURN SYSTEM(CTR)

CTR can be defined as a system

- that requires firms to deem a corporate group as an entity for tax returns and to pay corporate income tax against the entire taxable income.
- This system has been established since the Corporate Income Tax Reform Act of 2002 (corporate income tax §81) in Japan.
- The introduction of CTR in a group depends on its needs; therefore, I estimate some economic incentive for groups' decision to introduce this system.

FEATURES OF CTR

Firms can offset their gains with losses in the group account when they calculate the entire taxable income in the consolidated corporate group.

- Especially for holding companies, CTR adoption might be relevant because they can reduce their taxable income using their tax loss carryforward.

It is possible to combine the total R&D (research and development) tax credits of all firms that belong to the CTR group, and utilize this R&D tax credit efficiently to save on the payment of taxes.

- This rule also applies for contribution deductions and foreign tax credits.

All the dividends paid from subsidiaries are nontaxable.

- Eventually, firms can expect to boost their post-tax income if they engage in CTR.

TAX LOSS UTILIZATION

Individual tax return(parent company holds tax loss 1600)

	Income	Loss	Tax paid
P	400	▲400	0
Subsidiary X	100	0	30
Subsidiary Y	50	0	15
total	550	▲400	45

over 3years until tax loss expires

CTR (parent company holds tax loss 1600)

	Income	Loss	Tax paid
P	400	▲400	0
Subsidiary X	100	▲100	0
Subsidiary Y	50	▲50	0
total	550	▲550	0

Less than 2years until tax loss expires

SOME DRAWBACKS TO ADOPT CTR1

Disadvantages of CTR are ①revaluation② abandon of tax loss carryforward of subsidiaries

The CTR rules are inflexible in handling revaluation gains and losses and the tax loss carryforward of subsidiaries when firms adopt the CTR status
All subsidiaries that include the consolidated tax return group are forced to revalue their assets and debt and settle unrealized gains and losses with revaluation gains and losses when they enter this group, in principle

Essentially, this rule embodies the initial concept that firms are disallowed from taking the tax loss carryforward of subsidiaries into the consolidated tax return group to reduce tax payment

SOME DRAWBACKS TO ADOPT CTR2

It is virtually impossible to withdraw the status of CTR after firms choose to adopt CTR. In general, they need to establish a tax payment system for consolidated tax returns if they adopt CTR.

- Therefore, it is necessary for firms that engage in CTR to prepare for the setting of a sophisticated tax payment system because of the complexities of legal procedures.

It is immensely difficult to perform the procedure of CTR setting without the advice and involvement of tax advisors, including external professional consulting firms.

- Firms need to consider several important issues when they file for the adoption of CTR. Therefore, it is frequently seen that firms utilize the tax support provided by professional consulting firms.

RESEARCH QUESTION

Desai and Dharmapala (2006) indicate the important trigger of tax avoidance is the weakness of corporate governance (CG).

- Tax avoidance is rooted with the agency relationship between shareholders and managers
- CTR is a legal tax saving tool for management, that is, tool for tax avoidance.

Therefore, I raise these research questions.

- What characteristics do corporate groups which adopt CTR have?
- Are there any differences between corporate groups which adopt CTR and don't adopt?
- Does adoption of CTR involve with the Corporate Governance?

LITERATURE REVIEW

Lassila et al. (2010) examine the factors that influenced public companies to retain or dismiss their audit firms as tax service providers

- They find a positive relation between a company's tax and operating complexity and the probability that it retained its auditor-provided tax services.
- This result suggests that complexity increases the potential benefits from knowledge spillover relative to the costs of perceived auditor independence impairment.

LITERATURE REVIEW

Desai and Dharmapala[2006]

- based on a given relationship between rent diversion and tax sheltering, well-governed firms provide less scope than poorly governed firms for reductions in diversion, and hence for the offsetting reductions in sheltering (as initial diversion levels are lower, by definition, for well-governed firms).

Wilson [2009]

- He finds that active tax shelter firms with strong corporate governance exhibit positive abnormal returns. This finding is consistent with tax sheltering being a tool for wealth creation in well-governed firms.

Frank et al. [2009]

- They perform several empirical analyses to examine the relation between financial and tax reporting aggressiveness after establishing the external validity of the measure of tax reporting aggressiveness. This study concludes that financial reporting and tax reporting aggressiveness are significantly positively related.

HYPOTHESIS 1～3
MOTIVATION MANAGEMENT ADOPT CTR

H1 ： An organization with CG that functions effectively is expected to adopt CTR, that is, firms with well-functioning CG are relatively likely to adopt CTR.

H2-1: Companies adopting CTR are more active in reducing tax burden.

H2-2: CG has a significant relationship with tax avoidance activity.

H3-1: Even corporations that are highly complex organizations find it easy to accept the status of CTR because the Board of Directors constructively attempts to reform the firm.

H3-2: Even firms that are highly complex organizations rarely accept the status of CTR because these firms own machinery, plants, and equipment, which are an obstacle to the reform of the firm.

REGARDING HYPOTHESIS 3

These hypotheses imply

- Firms that are complex organizations could improve their transparency on their own, along with the corporate values of the corporate group if they determine to engage in organizational reform.
- That is, complex organizational structure leads to high agency cost, and this leads to a decision of organizational reform. Lang et al. (2012) explain that firms with low information asymmetry and more transparency in corporate substance have low cost of equity capital, and therefore this type of firm has high liquidity with share purchase; as a result, it is inclined to raise corporate value.

In contrast, companies with more fixed assets, such as facilities for business content, plants, properties, and equipment, find it more difficult to manage these items

- it is also expected that they will be unable to undertake drastic organizational reform. Therefore, this study sets out contrasting hypotheses such as H3-1 and H3-2.

HYPOTHESIS4
MOTIVATION MANAGEMENT ADOPT CTR

- H4-1: The presence or absence of carried forward loss has a significant positive correlation with CTR adoption.
- H4-2: The results of subsidiaries have a significant relationship with CTR adoption.

This article speculates that the objective of adopting CTR is to improve the performance of the entire group. If it is suspected that the subsidiary's net operating loss carryforward is related to CTR adoption incentive, this study expects that improving the performance of the group as a whole by incorporating the results of the successful subsidiary into the group will also be positively related to the adoption of CTR.

SELF-SELECTION AND DESIGN OF THIS RESEARCH

In this research, the hypotheses of the previous section are verified using Heckman's two-step estimation method, according to the models of Lassila et al. (2010) and McGuire et al. (2012).

As mentioned earlier, it is relatively clearer why CTR might be adopted as an important object for reducing tax burden. However, even if the tax burden is reduced by the adoption of CTR, the situation is not an intrinsic but intentional result. Even if we analyze tax avoidance behavior based on data, including the selection procedure for adopting CTR, the self-selection bias will be included in the analysis.

The use of Heckman's (1979) two-stage model as a method to control for selection bias in this study is consistent with prior research in accounting. Specific examples of studies that use the Heckman (1979) model to control for self-selection bias include Leuz and Verrecchia (2000), Chaney et al. (2004), Omer et al. (2006), Tucker (2007), and Badertscher et al. (2009).

RESEARCH DESIGN1

- $PR(CTRadoption) = a_0 + \beta_1 IDRTO + \beta_2 IADTADT + \beta_3 INST + \beta_4 BRDAGEAVE + \beta_5 LNSUBSIDI + \beta_6 CAPITALINTENSITY + \beta_7 LNNOL + \beta_8 RRI + \beta_9 \mathrm{RD} + \beta_{10} FS + \beta_{11} MV + \beta_{12} BTM + \beta_{13} LEVERAGE + \beta_{14} POSITIVEIN * RD + \beta_k INDUSTRY\ fIXED\ EFFECTS + \beta_j YEAR\ FIXED\ EFFECTS + \varepsilon \cdot \cdot \cdot (1)$

- Here, in the first stage, we estimate the selection process of companies adopting a consolidated tax payment system using presumption model (1) on adoption of a consolidated tax payment system.

CHARACTERISTIC OF HECKMAN'S TWO-STAGE ESTIMATION

Heckman's two-stage estimation is generally used when the data they utilize include selection bias. While this research analyzes a large number of companies, including both CTR adopter and non-adopter companies, it is necessary to recognize the existence of selection bias.

- For this reason, conditions to be adopted in the CTR system are included in the test variables and control variables. The variable Pro (CTRadoption) representing the adoption of CTR, which is a dependent variable, is a binary variable set at 1 for companies that adopted CTR during the verification period from 2006 to 2010, and at 0 for companies that did not adopt CTR

RESEARCH DESIGN 2

- McGuire et al. (2012) explain that the inverse Mills ratio controls the influence from both observable and unobservable factors that affect decision making by management with CTR.
- According to Lennox et al. (2012), since an inverse Mills ratio is a function of the first stage, its association with observable and unobservable determinants can be analyzed from the coefficient and significance level.
  - Therefore, as it is one of the control variables, we insert the inverse Mills ratio into the analysis model in the second stage. The inverse Mills ratio is used for verification of H2-1.

$$TAX\ AVOID_i = \alpha_0 + \alpha_1 EBRD\_NUM_i + \alpha_2 DIR_i + \alpha_3 FRGN_i + \alpha_4 CGRANKING_i + \alpha_5 TOBINQ_i + \alpha_6 ROA_i + \alpha_6 DNOL_i + \alpha_7 PPE_i + \alpha_8 INVERSEMILLS_i + \varepsilon i$$

$$ETR, Current\ ETR \in TAXAVOID \cdots (2)$$

DEFINITIONS OF VARIABLES

Variables	Predicted sign	Description of variables
CTRadoption		Dummy variable that indicates 1 for companies confirmed as subscribing to the consolidated tax payment system , and 0 for companies not confirmed
IDRTO	+	Outside director ratio (= number of outside directors / number of boar members * 100)
IADTADT	—	Outside auditor ratio (= number of outside corporate auditors / numbe of auditor board members * 100)
INST	—	Institutional investor ownership ratio (= foreign ownership rati [excluding those identified as foreign corporation s] + trust accoun ownership ratio + life insurance special account ownership ratio)
BRDAGEAVE	—	Average age of directors
LNSUBSIDI	+	Number of consolidated subsidiaries standardized by natural logarithı
CAPITALINTENSITY	—	Tangible fixed assets standardized by total assets
LNNOL	+	Tax loss carryforwards standardized by natural logarithm
RRI	+	Consolidated ordinary profit vs. non-consolidated ordinary profi (consolidated / non-consolidated ratio)
RD	—	R&D expenditure ratio (= R&D expenditure / sales * 100)
FS	—	Overseas sales to total sales ratio (= overseas sales / total sales * 100)
MV	+	Aggregated market value standardized by natural logarithm (as of the closing date)
BTM	+	Average book value market price ratio in the past three years (= net assets per share / stock price)
LEVERAGE	+	Total interest-bearing debt / total assets
POSITIVEIN	?	Dummy variable that indicates 1 for companies withpositive net incon before tax, and 0 for companies without it
ETR		(Corporate tax, resident tax, business tax + income tax adjustment, et / income before income taxes
CurrentETR		Income tax, resident tax, business tax / income before income taxes
EBRD_NUM	+	Number of Board of Directors members (scale adjustment) = total asse standardized by board members / natural loga

DATA

- The financial data used in the analysis of this study were collected from "Nikkei Needs Financial Quest (Nikkei FQ) Ver. 2.0," provided by Nikkei Digital Media. All listed companies were included in the analysis, excluding the financial industry (securities, banking, and insurance.)
- Regarding the financial data, we used consolidated financial statement data as they are related to the research questions, and in order to eliminate the impact of changes in the settlement period due to mergers, and so on, we used company data for 12-month business periods with no changes.
- Furthermore, in order to increase the number of companies adopting CTR, we did not limit the sample to companies with settlement of accounts in March. In addition, as described above, we used Nikkei Needs C-ges for CG-related data.
- Based on the results reported by Ito (2003), the analysis period reflects the results of CG reform after the accounting Big Bang, and it covers the five years from 2005 to 2010 as the period when a comparison is possible

Table 2 Shift in the number of CTR adopter firms

Year	Number of adopters (firm-year)
2006	48
2007	56
2008	67
2009	221
2010	264

Companies with missing data were excluded from the sample. In order to adjust abnormal values, the top and bottom 1% were eliminated for the main variables. As a result of these adjustments, the observation data reached a maximum of 16,024 and a minimum of 15,681 companies per year. The descriptive statistics values for the data used in the analysis are as shown in Table 3.

TABLE3 DESCRIPTIVE STATISTICS

	CTR adopters			CTR non-adopters			Total				Verification of average difference	
Variables	**Observed number**	**Mean**	**Standard deviation**	**Observed number**	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**	**Minimum value**	**Maximum value**	**t value or z value**	**P value**
IDRTO	654	12.584	14.402	15,254	8.354	12.224	8.528	12.350	0.000	50.000	-8.598	p<0.001
IADTADT	657	0.654	0.154	15,360	0.681	0.178	0.680	0.177	0.000	1.000	3.895	p<0.001
INST	646	18.275	16.222	15,217	12.407	13.744	12.646	13.901	0.000	57.630	-10.544	p<0.001
BRDAGEAVE	657	56.880	6.548	15,367	56.548	5.649	56.562	5.689	0.000	74.000	-1.463	p>0.1
LNSUBSIDI	602	2.627	1.236	15,263	1.539	1.274	1.581	1.290	0.000	5.231	-20.565	p<0.001
CAPITALINTENSITY	650	0.261	0.191	15,054	0.288	0.188	0.287	0.188	0.004	0.847	3.602	p<0.001
LNNOL	601	6.738	2.944	15,263	3.681	3.299	3.796	3.338	0.000	10.892	-22.372	p<0.001
RRI	633	1.433	1.577	15,231	1.027	1.058	1.044	1.086	0.000	8.670	-8.186	p<0.001
RD	652	0.018	0.030	15,212	0.013	0.024	0.013	0.024	0.000	0.178	-5.262	p<0.001
FS	647	0.168	0.231	15,217	0.108	0.189	0.110	0.191	0.000	0.825	-7.809	p<0.001
MV	637	10.235	2.125	15,227	9.262	1.798	9.301	1.823	0.000	14.296	-13.257	p<0.001
BTM	651	0.950	0.615	15,213	0.974	0.655	0.973	0.654	0.000	3.280	0.915	p>0.3
LEVERAGE	648	0.584	0.208	15,216	0.498	0.209	0.502	0.210	0.003	0.939	0.915	p<0.001
ETR	657	0.295	0.256	15,367	0.361	0.239	0.359	0.240	0.000	1.000	6.892	p<0.001
CurrentETR	654	0.730	0.349	15,298	0.765	0.340	0.763	0.341	0.000	1.000	2.551	p<0.05
EBRD_NUM	653	0.720	0.219	15,211	0.737	0.232	0.736	0.231	0.000	1.521	1.793	p<0.1
DIR	656	5.541	9.807	15,208	9.421	13.389	9.261	13.282	0.000	59.420	7.337	p<0.001
FRGN	646	11.766	12.065	15,218	7.503	9.547	7.676	9.699	0.000	48.010	-10.981	p<0.001
CGranking	654	5.704	1.435	15,111	5.424	1.413	5.435	1.415	1.130	9.710	-4.967	p<0.001
TOBINQ	648	1.081	0.445	15,216	1.028	0.543	1.030	0.539	0.000	4.080	-2.458	p<0.05
ROA	636	3.173	5.152	15,068	5.505	5.974	5.411	5.960	-13.801	32.120	9.696	p<0.001
DNOL	657	0.901	0.299	15,367	0.615	0.487	0.627	0.484	0.000	1.000	-14.83	p<0.001
PPE	624	9.559	2.588	15,057	8.680	2.066	8.715	2.096	2.833	13.939	-10.297	p<0.001

- Table 3 shows the differences in descriptive statistics values between the sample with CTR dummy 0 (CTR non-adopters group) and the sample with dummy 1 (CTR adopters group).
- Table 3 shows that the number of subsidiaries LNSUBSIDI is about 5 on average. A clear difference can be seen when looking at the CTR adopters group and non-adopters group separately. According to Table 3, the average number of subsidiaries in the CTR adopters group is 2.89, while for CTR non-adopters, the average is 1.57; the actual difference is shown to be more than double.
- This difference is significant at the 1% level. As presumed in H3, the CTR adopters group has many consolidated subsidiaries and a complicated organizational structure, which means that the results were in line with the prediction. There was also a difference regarding ETR; the CTR adopters group was 0.295, whereas the CTR non-adopters group was 0.361, which is 0.359 as a whole. In other words, the ETR of CTR adopters was remarkably low. The number of subsidiaries was calculated by converting the descriptive statistics values with an exponential function.

CORRELATION MATRIX

	CTRadoption	IDRTO	IADTADT	INST	BRDAGEAVE	LNSUBSIDI	CAPITALINTENSITY	LNNOL	RRI	RD	FS	MV	BTM	LEVERAGE
CTRadoption	1.000													
IDRTO	0.059	1.000												
IADTADT	-0.022	0.116	1.000											
INST	0.046	0.039	-0.101	1.000										
BRDAGEAVE	-0.001	0.003	-0.215	0.163	1.000									
LNSUBSIDI	0.162	0.033	-0.198	0.510	0.253	1.000								
CAPITALINTENSITY	-0.029	-0.053	-0.089	-0.008	0.159	0.057	1.000							
LNNOL	0.168	0.084	-0.063	0.161	0.051	0.488	0.015	1.000						
RRI	0.078	-0.025	-0.079	0.219	0.127	0.411	0.065	0.110	1.000					
RD	0.028	0.017	-0.046	0.177	0.102	0.128	-0.064	0.077	0.005	1.000				
FS	0.046	-0.023	-0.094	0.354	0.188	0.380	-0.031	0.176	0.145	0.405	1.000			
MV	0.075	0.029	-0.163	0.697	0.286	0.624	0.101	0.204	0.288	0.151	0.281	1.000		
BTM	-0.001	-0.125	-0.093	-0.201	0.265	-0.063	0.074	0.014	0.000	-0.063	-0.084	-0.188	1.000	
LEVERAGE	0.074	-0.016	-0.076	-0.149	0.056	0.165	0.195	0.251	0.065	-0.224	-0.074	-0.114	-0.102	1.000
ETR	-0.055	-0.044	-0.021	0.043	0.045	0.021	0.031	-0.258	0.142	-0.088	-0.098	0.101	-0.024	-0.058
CurrentETR	-0.018	-0.024	0.019	0.123	-0.011	0.016	-0.004	-0.291	0.133	-0.042	-0.020	0.136	-0.103	-0.122
EBRD_NUM	-0.020	0.037	-0.108	0.079	0.145	0.177	0.081	-0.023	0.077	-0.034	0.013	0.190	-0.007	0.026
DIR	-0.049	-0.066	0.182	-0.202	-0.377	-0.299	-0.090	-0.160	-0.111	-0.065	-0.182	-0.296	-0.176	-0.041
FRGN	0.049	0.055	-0.070	0.862	0.109	0.434	-0.055	0.133	0.179	0.168	0.327	0.612	-0.176	-0.188
CGranking	0.024	0.253	0.047	0.533	-0.049	0.233	-0.012	-0.082	0.180	0.106	0.171	0.497	-0.431	-0.221
TOBINQ	0.007	0.066	0.019	0.239	-0.058	0.143	-0.045	0.084	0.045	0.075	0.104	0.299	-0.276	-0.026
ROA	-0.066	0.004	0.100	0.258	-0.175	-0.077	-0.100	-0.378	0.073	0.000	0.023	0.197	-0.402	-0.342
DNOL	0.107	0.064	-0.020	0.040	-0.007	0.361	0.003	0.888	0.112	0.038	0.109	0.054	0.033	0.201
PPE	0.061	-0.064	-0.251	0.494	0.444	0.606	0.564	0.270	0.278	0.076	0.236	0.710	0.103	0.199

	ETR	CurrentETR	EBRD_NUM	DIR	FRGN	CGranking	TOBINQ	ROA	DNOL	PPE
ETR	1.000									
CurrentETR	0.193	1.000								
EBRD_NUM	0.089	0.050	1.000							
DIR	0.041	0.044	-0.133	1.000						
FRGN	0.026	0.107	0.059	-0.160	1.000					
CGranking	0.141	0.256	-0.108	0.013	0.479	1.000				
TOBINQ	-0.018	0.052	0.002	-0.032	0.221	0.350	1.000			
ROA	0.246	0.302	0.030	0.197	0.229	0.571	0.219	1.000		
DNOL	-0.216	-0.289	-0.034	-0.061	0.023	-0.108	0.059	-0.321	1.000	
PPE	0.070	0.016	0.195	-0.393	0.402	0.176	0.057	-0.109	0.117	1.000

RESULT OF THE FIRST-STAGE ANALYSIS

CTRadoption	Coefficient	z-value		Coefficient	z-value	
IDRTO	0.0006	4.42	***	0.0006	4.32	***
IADTADT	-0.0039	-0.41		-0.0135	-1.41	
INST	-0.0004	-2.53	**	-0.0005	-2.72	***
BRDAGEAVE	-0.0011	-3.06	***	-0.0012	-3.19	***
LNSUBSIDI	0.0156	7.18	***	0.0187	8.68	***
CAPITALINTENSITY	-0.0269	-2.65	***	-0.0281	-2.76	***
LNNOL	0.0040	5.38	***	0.0059	6.17	***
RRI	0.0018	1.11		0.0021	1.26	
RD	-0.3723	-1.63		0.0495	0.32	
FS	-0.0060	-0.51		-0.0111	-0.95	
MV	0.0036	2.19	**	0.0009	0.54	
BTM	-0.0042	-1.28		-0.0009	-0.28	
LEVERAGE	0.0478	4.8	***	0.0429	4.41	***
POSITIVEEIN*RD	0.4967	2.15	**	0.1255	0.77	
Industry / annual dummy		Yes			yes	
Intercept	0.0499	2.07	**	0.0819	3.38	***
* p<0.1, ** p<0.05, *** p<0.01						

INTERPRETATION ABOUT H3

H3-1 is based on the assumption that companies with more complex organizational structures will have a higher probability of adopting CTR.

- On the other hand, it is also predicted that an expansion of tangible fixed assets concomitant with business development can be a constraint against large-scale organizational restructuring through CTR adoption. The analysis results showed that the number of subsidiaries LNSUBSIDI was consistently statistically significant and in line with the predicted sign.

Regarding H3-2, which was set as a contrasting hypothesis, the capital intensity CAPITALINTENSITY was also significant, and the result was the predicted sign.

- From these results, we can interpret H3 as supported.

INTERPRETATION ABOUT H4

As shown in H4-1, we assume that the presence or absence of loss carryforwards has a significant positive correlation with CTR adoption.

- As for this prediction, the results for the loss carryforwards LNNOL are statistically significant and in accordance with the predicted sign. This seems to support our expectation that an effective utilization of loss carryforwards is an important motivation for adopting CTR.
- This result suggests that companies fully understand the system's meaning, that the main objective of adopting CTR is to utilize the loss carryforwards.

On the other hand, H4-2,cannot be adopted from the results of the consolidated / non-consolidated ratio RRI.

- While not statistically significant, it was positive in accordance with the predicted sign, and so we interpret this to mean that a company with better performing subsidiaries will be more positive toward CTR adoption.
- The troubles of a parent company are aggravated by the existence of loss carryforwards; by contrast, our interpretation is that a company group, whose performance is supported by its subsidiaries, is likelier to adopt CTR as a way to incorporate the good performance of the subsidiaries.
- However, since this is not statistically significant, it is merely a possibility. Further verification is necessary for this variable.

SECOND-STAGE ESTIMATION RESULTS

	ETR			CurrentETR		
	Coefficient	z-value		Coefficient	z-value	
EBRDNUM	0.666	9.440	***	0.298	3.750	***
DIR	-0.004	-3.480	***	-0.001	-0.790	
FRGN	-0.010	-4.640	***	-0.002	-0.750	
CGranking	0.182	11.480	***	0.075	4.210	***
TOBINQ	-0.183	-5.120	***	0.008	0.190	
ROA	0.116	26.420	***	0.046	9.920	***
DNOL	-0.838	-20.760	***	-0.791	-15.960	***
PPE	0.089	9.760	***	0.014	1.380	
INVERSEMILLS	0.004	0.430		-0.043	-1.630	
Intercept	-0.732	-6.250	***	1.126	8.420	***
Wald	800.830		***	873.630		***
N	13792			13567		
pseud R2	0.2873			0.1139		
*** p<0.1, ** p<0.05, *** p<0.01**						

INTERPRETATION OF H2

This paper proceeds with the verification of H2 by examining the influence of factors affecting efforts to reduce tax burden.

- Of particular interest was the relationship between CG and the efforts to reduce tax burden.

Desai and Dharmapala (2006) explain that companies with dysfunctional CG are keener on reducing tax burdens, and Wilson (2009) points out that attempts to reduce tax burden by companies with strong CG increase corporate value.

- The first-stage analysis results demonstrated that companies with functional CG have various aspects, and we examined whether these factors are related to efforts to reduce tax burden by using Heckman's two-step estimation method.

WITH REGARD TO THE SIZE OF THE BOARD OF DIRECTORS EBRDNUM

The size of the Board of Directors EBRDNUM is an important variable that reflects CG status. From the analysis results, EBRDNUM and efforts to reduce the tax burden are related in a consistent, statistically positive, and significant manner.

- If the size of the Board of Directors is large, CG will not function and, as a result, the Board will be passive toward reducing tax burden. The results support the current situation of disinterest in CTR adoption associated with large-scale organizational reforms.

On the other hand, the Board of Directors' shareholding ratio DIR and the foreign investor shareholding ratio FRGN did not lead to statistically significant results in either model. As such, we emphasize the CGranking variable as crucial to verifying H2-2,

- as it is the CG-related variable reflecting the greatest diversity of aspects. This variable was developed to reflect the various aspects of corporate governance as much as possible.

RESULT OF THE ANALYSIS

The analysis yields consistently significant results for CG ranking in both models. However, the signs suggested that companies with functional CG are likely to be passive regarding tax burden reduction.

- Although various CG-related variables and aspects of CG were seen as correlating with attempts to reduce tax burden, if I base the analysis on comprehensive indicators, the results show that an increase in CGranking is accompanied by an increase in the scale of efforts to reduce tax burden, which implies passivity.

This paper examines the influence of factors that had been invisible in the analysis thus far by looking at INVERSEMILLS.

- In Table 6, none of them was statistically significant. We can interpret this to mean that the influence of self-selection bias is not especially strong.

FINDINGS

Even in the case of companies with functional CG, whether or not they are positive toward CTR adoption depends on what aspects are dominant.

- Based on the analysis results, it is likely that companies with high outside director ratio and a Board of Directors of young average age and small size will adopt CTR.

CTR adoption is influenced by the utilization of loss carryforwards, as supported by the intention for the system.

- In addition, since companies with a consolidated / non-consolidated ratio are more positive toward adopting CTR, a parent company's performance decreases the more it has loss carryforwards, while subsidiaries performing well tend to adopt CTR.

FINDINGS 2

Companies that do not have many tangible fixed assets, but have a large number of subsidiaries are likely to consider CTR adoption.

- As CTR adoption promotes conversion into wholly owned subsidiaries, minority shareholder equity is reduced, and interests are simplified.
- The simplification of interests can also reduce agency costs, something that managers appear to expect will further increase corporate value.

It was suggested that companies with big boards and high CG rankings are passive when it comes to reducing tax burden. The smaller is the size of the Board of Directors, the more aggressively it can act, making it reduce tax burden more actively.

- On the other hand, companies that are able to evaluate CG comprehensively have good CG balance, allowing for the interpretation that they weigh the positive and negative aspects of attempts at tax burden reduction from multiple angles and consequently refrain from becoming aggressive.

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THANK YOU FOR YOUR ATTENTION!