The influence of multinationalization on tax aggressiveness

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ABSTRACT

I examine the influence of multinationalization on tax aggressiveness in Japan. Since the Japanese corporate tax rate is higher than that in other countries, multinational companies can reduce the tax burden of the entire corporate group by using the differences in tax rates among several countries. Therefore, I analyze whether multinational companies reduce their tax burden due to factors other than the differences in tax rates among countries. I reveal that multinational companies are more tax aggressive. As a result, my findings suggest that multinational companies reduce tax payments by conducting dubious international transactions. My findings contribute to the tax planning of companies and reformation of the tax policy by the government.

Keywords: *multinationalization, tax aggressiveness, dubious international transactions*

INTRODUCTION

In this study, I reveal whether multinationalization of Japanese companies tends to reduce their tax burden, after adjusting for the difference in tax rates among countries. Multinationalization means that the parent company of a Japanese company has one or more subsidiaries or affiliated companies in foreign countries.

The motivation for this study is as follows. First, researchers analyzing tax avoidance have revealed that multinational companies are aggressive in tax burden reduction (e.g., Rego, 2003; Wilson, 2009; Lisowsky, 2010; Onuma, 2015). However, it is natural that the tax burden of multinational companies is reduced, because the Japanese corporate tax rate is higher than that of other countries. Moreover, even if the tax burden of Japanese multinational companies is reduced, we do not know whether it is the result of intentionally establishing subsidiaries in countries with low tax burdens. Therefore, in research on tax aggressiveness in Japan, it is necessary to clarify whether multinational companies tend to reduce their tax burden just except for the difference in tax rates.

In fact, tax avoidance activities have become a problem because companies increasingly use complex schemes with great skill[1] (Yatsuo, 2014, p. 47). For example, U.S. Apple Inc. paid taxes of only 2% on income from transactions through its foreign subsidiaries (The Nikkei, 2014a). In addition, the European Commission (EC) indicated there had been a violation of the regulations of the tax system that Luxembourg applied to Fiat (The Nikkei, 2014a). Therefore, the Organisation for Economic Co-operation and Development (OECD) started the Base Erosion and Profit Shifting (BEPS) project to address these problems, and confirmed the necessity of countermeasures to prevent tax evasion by

[1] I describe the definition of tax avoidance in Section 2. Almost all tax avoidance is legal, although some of the schemes may be illegal (OECD/G20, 2014, p. 13).

multinational companies. This BEPS project has already published its final report on the BEPS action plan, and it is expected that OECD member countries and other "Group of 20" member countries will reconsider existing international tax rules and revise their domestic tax laws. In fact, based on the recommendations of the BEPS project, the exclusion of foreign subsidiary dividends from the gross revenue system has been reconsidered to prevent a double tax exemption in Japan. Therefore, based on the taxation revision in 2015 (Ministry of Finance, 2015), dividends to be included in non-taxable expenses in the country where the foreign subsidiary is located will be included in the gross revenue of the parent company in the country that received payment.

In addition, while many countries are required to respond to tax avoidance, the extent of the problem of lower taxes caused by using tax havens became evident with the leak of the Panama Papers (The Nikkei, 2016). Moreover, the International Consortium of Investigative Journalists revealed that the taxing agency of Luxembourg contracted tax preferential treatments with about 340 global companies, including Japanese companies. Thus, I think that Japanese companies may also conduct tax avoidance.

As the research results, I reveal that multinational companies display more tax aggressiveness, despite controlling for the differences of tax rates among countries. Thus, this result suggests that multinational companies reduce tax payments by conducting dubious international transactions.

The rest of this paper proceeds as follows. The next section explains the research background and develops the hypothesis. The third section outlines the research design. The subsequent two sections outline the results and additional analysis. The final section concludes.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Relationships among tax saving, tax evasion, and tax avoidance

Companies undertake tax saving, tax evasion, and tax avoidance to reduce their tax burden. Tax saving is the act of reducing the tax burden according to the existing tax law (Kaneko 2016, p. 125), because the act of tax saving does not satisfy taxation requirements and tax duty does not occur (Nakazato et al., 2015, p. 50). On the other hand, Kaneko (2016) states that tax evasion is an act of concealing all or part of the fact that the taxation requirements are satisfied. In addition, Tanaka (1998) describes tax evasion as an illegal act that prevents the fulfillment of an established tax obligation. Obuchi et al. (2009) refer to tax evasion as a case where some disguised act avoids satisfaction of the taxation requirement provision. In other words, although a tax payment obligation is established, tax evasion is the act of keeping that fact secret, as if the tax obligation had not been established. Therefore, tax saving and tax evasion are distinguished by whether the act is legal or illegal (Nakazato et al., 2015, p. 50).

However, whether the concept of tax avoidance is legal or illegal is an ambiguous gray zone, and the definition based on theory also varies because tax avoidance is a boundary concept (Nakazato et al., 2015, p. 50). For legal purposes, Kaneko (2016) and Kiyonaga (2013) define tax avoidance as the adoption of an unusual form that does not satisfy taxation requirements. In addition, Matsuzawa (1983) and Yatsuo (2014) define tax avoidance as the adoption of an abnormal form of the law that does not satisfy taxation requirements.

There are also several definitions of tax avoidance in accounting research. Rego (2003) describes tax avoidance as an act to reduce income tax legally. Dyreng et al. (2008,

2010) refer to tax avoidance is the act of reducing the corporate tax burden corresponding to pretax income. Hanlon and Heitzman (2010) define tax evasion as reducing explicit tax and do not distinguish whether it is legal or illegal. Thus, tax avoidance as defined by Rego (2003) is an act of reducing the tax burden according to tax regulations and the satisfaction of the taxation requirement. On the other hand, tax avoidance, as defined by Dyreng et al. (2008) and Hanlon and Heitzman (2010), includes all tax burden reductions, whether legal or illegal. Therefore, there are various definitions in accounting research about the reduction of the tax burden.

In this section, examination of the definition of tax savings, tax evasion, and tax avoidance leads to the finding that tax avoidance has no definite provision under the law, and the theory definition is also inconsistent. Thus, it is expected that confusion will arise from using the terms tax saving, tax evasion, and tax avoidance. Therefore, in the following subsection, I use the term *tax aggressiveness* to refer to reduced taxable income and tax payment using any method, including legal, illegal, or unclear gray zones.[2]

The factor of tax aggressiveness

Problems related to tax aggressiveness have raised concern that multinational companies have not paid much tax in countries where they operate most of their business, while after the Lehman shock in 2008, the world economy has stagnated and each country has sought to increase tax and reduce spending (The Nikkei, 2014b). In fact, some prior studies have examined whether multinational versus domestic companies have different tendencies toward tax aggressiveness. Rego (2003) includes elements of foreign business in an extended model, which were not considered in Gupta and Newberry (1997), and examines whether multinational companies avoid tax payments more than domestic companies do. As a result, Rego (2003) finds that multinational companies display tax aggressiveness.

Relatively recent studies have revealed that domestic companies also have opportunities to reduce their tax burden by utilizing tax shelters and profit shifting (Wilson, 2009; Lisowsky, 2010). Dyreng et al. (2017) investigate changes in the effective tax rate of companies over the past 25 years, and examine whether time trends and corporate characteristics are factors of tax aggressiveness. From a sample of 54,005 company-years from 1998 to 2012, Dyreng et al. (2017) find that multinational companies and domestic companies display more tax aggressiveness over time. However, the results from examining the sample suggest that multinational companies display less tax aggressiveness, because there is a significantly positive relationship between tax aggressiveness and multinational companies. Therefore, Dyreng et al. (2017) indicate that that focusing on tax aggressiveness of only multinational companies may be misguided.

In addition, Onuma (2015) uses a sample of 6,225 company-years from 2004 to 2008 to examine whether tax aggressiveness is related to corporate foreign investment and business development assuming foreign sales are greater than zero. He finds that foreign business is a factor in tax aggressiveness. Therefore, he estimates that geographical conditions influence tax aggressiveness, and includes six regional dummies by utilizing segment information. Furthermore, Onuma (2015) includes areas listed as tax havens by Japan's National Tax Agency. He finds that business in Asia prevents tax aggressiveness, but business in the United States and tax havens display a strong factor of tax aggressiveness.

[2] The term "tax aggressiveness" is mentioned for the first time in Frank et al. (2009).

Considering prior literature, the research results on corporate multinationalization and tax aggressiveness are mixed. However, unlike in the United States, corporate tax rates in Japan do not vary much among prefectures. In addition, although domestic companies can reduce tax burden by dividends, special depreciation, reserves for reduction entry, and research and development tax deductions, multinational companies have opportunities to reduce tax burdens through overseas transactions that domestic companies do not have. Therefore, in Japan, it is considered that multinational companies have more tax planning opportunities to reduce tax burden than domestic companies do. Thus, I examine the following hypothesis.

H1: Even after adjustment for difference in tax rates among countries, multinational companies display more tax aggressiveness than domestic companies.

Companies might use foreign subsidiaries to conduct their main economic activities, rather than using foreign subsidiaries with low tax rates to reduce tax burdens. Therefore, tax aggressiveness in this study does not include the reduction of tax burden by using tax rate differences among countries.

RESEARCH DESIGN

Measure of tax aggressiveness

Among the measures used in prior literature, measurements of tax aggressiveness include the effective tax rate under Generally Accepted Accounting Principles (*GAAPETR*), the current effective tax rate (*CurrentETR*), the cash effective tax rate (*CASHETR*), the book-tax difference (*BTD*), the residual book-tax difference (*ResidualBTD*) and the discretionary portion (*DTAX*).

GAAPETR captures permanent tax differences because it is defined as current and deferred tax expense divided by pretax income. Thus, *GAAPETR* is not an appropriate measure, because it does not reflect deferral of taxation (Hanlon and Heitzman, 2010).

CASHETR is frequently used in some prior literature targeting foreign companies (e.g., Dyreng et al., 2008, 2017; Chen et al., 2010; Badertscher et al., 2013; Hoi et al., 2013). *CASHETR* captures temporary and permanent differences, because it is defined as cash taxes paid divided by pretax income. However, an ordinary corporation should file an interim return form to the tax office director within two months of the day on which six months have elapsed from the first day of said business year (Article 71 of the Corporation Tax Act). In addition, a domestic corporation should file a final return form submitted to the director of the tax office within two months of the day following the last day of each business year (Article 74 of the Corporation Tax Act). Thus, when tax aggressiveness by percentage is calculated, Yamashita (2010) and Okuda and Yamashita (2011) show it is desirable to use *CurrentETR* instead of *CASHETR* in Japan, because the numerator and denominator do not correspond in the latter ratio, since cash tax paid is the tax payment of prior and current fiscal years.

Therefore, I utilize the current effective tax rate for three years (*CurrentETR3*) to calculate the percentage of tax aggressiveness. Using an effective tax rate measure over a three-year horizon avoids annual volatility in effective tax rates, and mitigates concerns

about earnings management through accrual effects present in current tax expense.[3] *CurrentETR3* is defined as:

$$\text{Current effective tax rate for three years (}\textit{CurrentETR3}\text{)} = \frac{\Sigma \text{ Corporate, inhabitant, and enterprise taxes}}{\Sigma \text{ Net income before income taxes}}$$

A smaller *CurrentETR3* means more tax aggressiveness.

Empirical model

To test Hypothesis 1, I estimate the following pooled cross-sectional regression:

$$\textbf{Model1.}\ \textit{CurrentETR3} = \beta_0 + \beta_1 MNC_{it} + \beta_2 SIZE_{it} + \beta_3 FORTAX_{it} + \beta_4 STAT_{it} + \beta_5 R\&D_{it} + \beta_6 LEV_{it} + \beta_7 INCOME_{it} + \beta_8 NOL_{it} + \varepsilon_{it} \quad (1)$$

Where:

CurrentETR3 refers to the measure of tax aggressiveness; *MNC* refers to multinationalization of companies; and *SIZE*, *FORTAX*, *STAT*, *R&D*, *LEV*, *INCOME* and *NOL* are control variables.[4] Table 1 presents the detailed definitions of the independent and control variables.

Multinationalization (*MNC*) is the independent variable. Prior literature uses foreign assets (Rego, 2003), existence of a foreign subsidiary (Markle and Shackelford, 2012) and pre-tax profit (Dyreng et al., 2017) as proxies for multinational companies. However, in Japanese financial statements, there are no data available on pretax foreign income and foreign assets, because the information is not published. Thus, I use the following method. First, I confirm whether the tax rate difference of foreign subsidiaries (*FORTAX*) [5] (see Table 1 for this variable) is adjusted between the statutory effective tax rate and the corporation tax rate after tax-effect accounting is applied based on the tax-effect accounting relationship in the notes to the consolidated financial statements. *MNC* equals 1 if the tax rate difference of foreign subsidiaries is adjusted. Second, I confirm whether the foreign currency conversion adjustment account is recorded in the consolidated financial statements, and *MNC* equals 1 if it is recorded in the statements.[6] Third, in "the status of affiliates of the securities report," I confirm whether the company has foreign-consolidated subsidiaries or foreign-affiliated companies, and if so, *MNC* equals 1.[7] Therefore, if multinational companies with foreign subsidiaries and foreign-affiliated companies display more tax aggressiveness, I expect a negative relationship between *CurrentETR3* and *MNC*.

[3] In prior literature in other countries, a long-term cash effective tax rate of three to ten years is used, depending on the research (Hanlon and Heitzman, 2010). In this study, I use the average effective tax rate for three years to avoid the economic impact caused by the Lehman shock.

[4] *CurrentETR3* was adjusted to fall within the range of zero to one to adjust for the influence of outliers.

[5] Tax rate differences of foreign subsidiaries include "tax rate differences with subsidiaries," "tax rate differences with consolidated subsidiaries," and "tax rate differences of foreign subsidiaries."

[6] When using foreign sales as the proxy for multinational companies, it should include companies that export only; however, these companies do not have foreign subsidiaries. Thus, in this study, I use the foreign currency conversion adjustment account.

[7] Foreign currency translation differences arising from hedging instruments that target investments in subsidiaries as hedges can be included in the foreign currency translation adjustment account; thus, the foreign currency translation adjustments on the consolidated financial statements may be recorded as 0. Therefore, I confirm whether the company has foreign consolidated subsidiaries or foreign affiliates.

SIZE is included to control for firm size. I expect a negative relationship between *CurrentETR3* and *SIZE* if the company prioritizes tax-planning opportunities over political costs. On the other hand, I expect a positive relationship between *CurrentETR3* and *SIZE* if the company prioritizes political costs over tax planning opportunities.

Table 1. *Description of variables*

Variable	Definition of variables	Sign
MNC	An indicator that equals 1 if there are tax rate differences of foreign subsidiaries, the foreign currency conversion adjustment account is reported in the financial statements, or there are foreign-consolidated subsidiaries or foreign-affiliated companies, and 0 otherwise.	−
SIZE	Natural logarithm of total assets at prior year fiscal year-end.	?
FORTAX	FORTAX is the tax rate difference of foreign subsidiaries less the national statutory effective tax rate for each fiscal year shown in Table 2.	+
STAT	National statutory effective tax rate for each fiscal year. It was 40.49% from February 2011 to February 2012 and 35.42% from March 2012 to February 2015.	+
R&D	Research and development expenses divided by current average total assets at fiscal year-end.	−
LEV	Total liabilities at fiscal year-end divided by total assets at prior fiscal year-end.	−
INCOME	An indicator that equals 1 if pretax net income is more than the median, and 0 otherwise.	−
NOL	NOL is the difference between prior and current fiscal year-end loss carryforward divided by current average total assets.	+

I include the tax rate difference of foreign subsidiaries (*FORTAX*) and the national statutory effective tax rate (*STAT*) to control for difference of tax rate. *FORTAX* is taken from data disclosed in "the tax-effect accounting relationship" of the notes to the consolidated financial statements. I control *STAT,* because the corporate tax rate in Japan changed during the analysis period in this research.

I include research and development expenditure (*R&D*), leverage ratio (*LEV*), Income dummy (*INCOME*), and the amount of loss carried forward (*NOL*) to control for incentives of tax planning.

I expect a negative relationship between *CurrentETR3* and *R&D*, *LEV,* and *INCOME*. I expect a positive relationship between *CurrentETR3* and *FORTAX*, *STAT* and *NOL*.

Table 2. *National statutory effective tax rate*

Year	Corporate tax rate	Prefectural taxation of corporate tax rate	Municipal taxation of corporate tax rate	Business tax rate	Statutory effective tax rate
From March 2011 to February 2012	30.0	6.0	14.7	7.2	40.49

From March 2012 to September 2015	25.5	6.0	14.7	7.2	35.42

Year is the fiscal year end in that period. Prefectural taxation of corporate tax rate is a restricted tax rate. Municipal taxation of corporate tax rate is a restricted rate. Business tax rate is standard taxation.

RESULTS

Sample

The sample period for the current study spans 2011—2015, as shown in Table 3. I collect my data from "Nikkei NEEDS" and use securities reports to compute tax aggressiveness, the hypothesized moderating variable, and the control variables used in the regression analysis. Collection of the tax rate difference of foreign subsidiaries (*FORTAX*) data relies on manual procedures from securities reports.

I utilize consolidated financial statement data to reveal the tax aggressiveness of the entire corporate group, and if these are not available, I use non-consolidated financial statement data.

Table 3. *Sample selection*

	Company-year
Listed companies from the fiscal year ended March 2011 to the fiscal year ended February 2015 (excluding bank, security, and insurance firms)	14,138
Companies that changed accounting periods	(409)
Companies with pre-tax profit of less than zero	(1,783)
Companies with missing values	(1,582)
Companies that undertook corporate reorganization	(50)
Samples (from 2011 to 2015)	10,314
Final samples (from 2011 to 2014)	7,037

Samples are not restricted to companies within the fiscal year ended in March, and include 4 years from the fiscal year ended March 2011 to the fiscal year ended February 2015. I exclude bank, securities, and insurance industries from the sample. The result is 14,138 company-years. The sample with 12 months in settlement month is 13,729 company-years. When the effective tax rate is used as the dependent variable, the variable is not a meaningful index if the pretax net income is zero or negative (Yamashita and Otogawa, 2009; Dyreng et al., 2017; Onuma 2015). Thus, excluding these cases, the samples amount to 11,946 company-years. When I exclude samples for which the necessary data for the analysis are not available, there are 10,364 company-years. When corporate restructuring is conducted, the amount of tax payment changes owing to changes in the asset structure. Thus, excluding samples with 50% or more changes in total

assets, the sample size is 10,314 company-years, and 3,215 companies when I use *ResidualBTD* and *DTAX* (see the additional analysis in the following section). In the main analysis, the final sample size is 7,037 company-years, because I use *CurrentETR3*.

Descriptive statistics

Table 4 reports descriptive statistics on the regression variables. The mean and median tax aggressiveness (*CurrentETR3*) are 37.4% and 39.3%, respectively, which are comparable to the results reported in prior literature (e.g., Markle and Shackelford, 2012).

Table 4. *Descriptive statistics*

Variable	n	Mean	Std. Dev.	25th percentile	Median	75th percentile
CurrentETR3	7,037	0.374	0.136	0.306	0.393	0.449
MNC	7,037	0.544	0.498	0.000	1.000	1.000
SIZE	7,037	10.502	1.574	9.411	10.384	11.441
FORTAX	7,037	0.358	0.043	0.354	0.354	0.405
STAT	7,037	0.370	0.023	0.354	0.354	0.405
R&D	7,037	0.012	0.019	0.000	0.003	0.016
LEV	7,037	0.500	0.214	0.334	0.497	0.658
INCOME	7,037	0.506	0.500	0.000	1.000	1.000
NOL	7,037	-0.004	0.024	-0.004	0.000	0.000

The sample period used for the study spans from 2011 to 2014. The descriptive statistics for all variables are based on the final sample when tax aggressiveness is measured by *CurrentETR3*. All continuous variables are trimmed at the 1st and 99th percentiles. The detailed definitions of the variables are provided in Table 1.

Table 5 reports the Pearson correlations among the regression variables used to estimate Eq. (1). The correlation between *MNC* and other control variables is not large. However, the correlation between *SIZE* and *INCOME* is large. Thus, I also show the variance inflation factor (VIF) in following section, because the variables potentially introduce issues related to multicollinearity.

Table 5. *Pearson correlations*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Current ETR3 (1)	1.000								
MNC (2)	-0.087***	1.000							
SIZE (3)	-0.0251**	0.383***	1.000						
FORTAX (4)	0.121***	-0.264***	-0.122***	1.000					
STAT (5)	0.062***	-0.035***	0.007	0.514***	1.000				
R&D (6)	-0.097**	0.275***	0.124***	-0.202***	0.003	1.000			
LEV (7)	-0.042***	-0.024**	0.157***	-0.001	-0.018	-0.203***	1.000		
INCOME (8)	-0.007	0.303***	0.686***	-0.073***	-0.009	0.096***	-0.029**	1.000	
NOL (9)	0.320***	0.061***	0.130***	-0.045***	-0.002	0.015	-0.034***	0.114***	1.000

This table reports the Pearson correlations between the variables used in the regression analysis. ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed). The detailed definitions of the variables are provided in Table 1.

Results from estimating Eq. (1)-Test of H1

This subsection reports the results for the test of H1, which examines the relationship between tax aggressiveness and multinationalization. As shown in Table 6, *MNC* is negatively and significantly associated with the *CurrentETR3* (t-statistic = -2.39). The effect of multinationalization on tax aggressiveness is also economically significant. Thus, I find a negative relationship between tax aggressiveness and multinationalization, which is consistent with my cross-sectional hypothesis. The result of tax aggressiveness does not include the reduction of tax burden due to the difference in tax rates among countries, because this study excludes the influence of companies that are establishing foreign subsidiaries and foreign affiliated companies to in fact conduct economic activities. Thus, I reveal that multinational companies display more tax aggressiveness even if I adjust for the difference in tax rates among countries. This result suggests that transactions with foreign companies conducted by multinational companies are complicated and lack transparency, and that there are delays in developing legislation.

The coefficients of the other control variables in Table 6 are almost significant and are consistent with predictions. Specifically, I find that large companies (*SIZE*) and companies with higher tax rate differences of foreign subsidiaries (*FORTAX*), a higher national statutory effective tax rate (*STAT*), and loss carryforward (*NOL*) are associated with more tax aggressiveness, while leverage (*LEV*) and the income dummy (*INCOME*) are associated with less tax aggressiveness. In addition, the variables potentially would not introduce issues related to multicollinearity, because the VIF value among variables is less than 2.53 of *SIZE*.

Table 6. *Tax aggressiveness and multinationalization (H1)*

		TAX=CurrentETR3	
	Exp. Sign	Coeff.	t-stat
Intercept	?	0.207	6.63**
MNC	−	-0.009	-2.39**
SIZE	?	0.004	2.82***
FORTAX	+	0.264	4.78***
STAT	+	0.176	2.01**
R&D	−	-0.116	-1.08
LEV	−	-0.015	-1.82*
INCOME	−	-0.008	-1.91*
NOL	+	1.858	21.1***
Year Dummy		Yes	
Industry Dummy		Yes	
Adj. R^2 (%)		20.12	
n		7,037	

***, **, and * Denote significance at the 1%, 5%, and 10% levels, respectively. This table reports the regression results of the relationship between tax aggressiveness and multinationalization. The dependent variable is multinationalization (*MNC*). This table shows the results using *CurrentETR3* to proxy tax aggressiveness. The t-statistics are based on robust standard error. The detailed definitions of all variables are provided in Table 1.

Additional analysis: other measures of tax aggressiveness

I examine the robustness of my results using two alternative measures of tax aggressiveness. The first measure is the residual book-tax difference (*ResidualBTD*), which I define similarly to Desai and Dharmapala (2006) as follows:

$$BTD_{it}=\beta TA_{it}+\beta m_i+\varepsilon_{it} \quad (2)$$

ResidualBTD is defined as an error term from equation (2), where *TA* refers to total accruals and *BTD* is scaled by lagged total assets. Thus, *ResidualBTD* captures the unexplained tax burden using total accruals of temporary and permanent differences.

The second measure is the discretionary portion (*DTAX*) of the *PERMDIFF* measure. *PERMDIFF* is essentially the difference between the effective and statutory tax rates multiplied by pretax accounting income. I define this measure similarly to Frank et al. (2009).[8]

$$PERMDIFF_{it}=\alpha_0+\alpha_1 INTANG_{it}+\alpha_2 UNCON1_{it}+\alpha_3 UNCON2_{it}+\alpha_4 MI_{it}+\alpha_5 CSTE_{it}+\alpha_6 LAGPERM_{it}+\varepsilon_{it} \quad (3)$$

[8] *DTAX* by Frank et al. (2009) includes loss carryforward (*NOL*); however, I exclude *NOL,* because it represents a temporary difference in this study.

DTAX is defined as an error term from equation (3), where *INTANG* represents goodwill and other intangibles divided by lagged total assets, *UNCON1* represents income reported under the equity method divided by lagged total assets, *UNCON2* represents loss reported under the equity method divided by lagged total assets, *MI* represents income (loss) attributable to minority interests divided by lagged total assets, *CSTE* represents current state income tax expense divided by lagged total assets, and *LAGPERM* represents lagged *PERMDIFF* divided by lagged total assets. Thus, *DTAX* captures the effect of tax credits and any other item that affects *GAAPETR*.

ResidualBTD and *DTAX* capture greater tax aggressiveness than does *CurrentETR3*, which captures the total tax burden of companies.[9]

Table 7. *Tax aggressiveness and multinationalization (H1)*

		TAX=ResidualBTD		TAX=DTAX	
	Exp. Sign	Coeff.	t-stat	Coeff.	t-stat
Intercept	?	-0.039	-7.76***	-0.011	-2.74***
MNC	+	0.001	2.01**	0.001	3.38***
SIZE	?	0.001	4.56***	-0.001	-6.99***
FORTAX	-	-0.056	-8.29***	-0.031	-4.95***
STAT	+	0.129	9.71***	0.090	8.00***
R&D	+	0.080	4.08***	0.083	5.70***
LEV	+	-0.001	-0.92	-0.001	-0.75
INCOME	+	-0.003	-5.36***	0.000	0.19
NOL	-	-0.418	-25.01***	-0.118	-8.90***
Year Dummies		Yes		Yes	
Industry Dummies		Yes		Yes	
Adj. R^2 (%)		25.33		10.28	
n		10,314		10,314	

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. This table reports the regression results of the relationship between tax aggressiveness and multinationalization. The dependent variable is multinationalization (*MNC*). This table shows the results using *ResidualBTD* and *DTAX* to proxy for tax aggressiveness. The t-statistics are based on robust standard errors. The detailed definitions of all variables are provided in Table 1.

As shown in Table 7, *MNC* is positively and significantly associated with the *ResidualBTD* (t-statistic = 2.01) and *DTAX* (t-statistic = 3.38). Thus, my result is also robust to utilizing other measures of tax aggressiveness.

CONCLUSION

I examine the influence of multinationalization on tax aggressiveness in Japan. This is the first study that directly examines, in Japan, the relationship between

[9] *ResidualBTD* and *DTAX* indicate that larger values represent more tax aggressiveness. Thus, the sign of the prediction is opposite to the sign of *CurrentETR3*.

multinationalization and tax aggressiveness controlling for the tax rate differences of foreign subsidiaries. My specific research goal is to analyze whether multinational companies reduce their tax burden even after adjusting for the difference in tax rates among countries.

I utilize the current effective tax rate for three years to calculate the percentage of tax aggressiveness to test my hypothesis. As a result, I find that, even after controlling for the difference of tax rates among foreign subsidiaries, multinational companies reduce their tax burden, which can give rise to the transactions underlying international tax strategies. Thus, this result suggests that Japanese multinational companies may reduce tax burden through dubious international transactions, because transactions with foreign companies conducted by multinational companies are complicated and lack transparency and there are delays in developing legislation. This result is robust to using two alternative measures of tax aggressiveness.

This study contributes by providing useful knowledge for tax planning by companies, as well as for the reform of government tax policy. The results point out that transactions conducted by multinational companies with foreign companies are complicated and may lack transparency, and that there are delays in developing legislation. Thus, the tax authorities must develop Japanese corporate tax law, and Japanese companies should conduct tax-planning corresponding to development of tax law.

There are several limitations in this study. First, Japanese companies themselves may not have substantially reduced their tax burden, because the corporate tax rate was being lowered during the analysis period. Second, as information on tax haven taxation and reduced tax rates of subsidiaries is not considered, the results may not accurately indicate the tax burden of the entire corporate group.

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