Dual Holding, Corporate Tax Avoidance, and Mediation Role of Corporate Governance

Zezhong Meng

Wuhan College, Wuhan, China

Email: 2712080137@qq.com

Abstract. This paper investigates the relationship between dual-holding firms and corporate tax avoidance practices. Dual holding is defined as a situation where at least one financial institution holds both debt and equity in a company simultaneously. I find that dual holding firms significantly increase corporate tax avoidance behavior. I control for the endogeneity issue by using mergers between lenders and institutional shareholders in the same firms as plausibly exogenous shocks, and my results still hold. Through cross-sectional analysis, I also find that the increase in tax avoidance behavior by dual holding companies is more significant in situations where corporate governance is weaker and where information transparency is lower. This suggests that corporate governance and information channels are the reasons why dual holding firms engage in different tax avoidance behaviors.

Keywords: Dual holdings; Corporate tax avoidance; Corporate Governance

JEL Classification: H25; H26; M41; G32

1 Introduction

This paper investigates the relationship between dual holding firms and firm tax avoidance practices. Dual holding is defined as a situation where a company is simultaneously held in stocks and bonds by at least one financial institution. I found that dual holding firms significantly increase corporate tax avoidance behavior. I use mergers between lenders and institutional shareholders in the same firms as plausibly exogenous shocks to control for endogeneity issue, and my results still hold. Through cross-sectional analysis, I found that the increase in tax avoidance behavior by dual holding companies is more significant in cases where corporate governance is weak and where information transparency is low. This indicates that corporate governance and information channels are reasons for dual holding firms to engage in different tax avoidance behaviors.

Dual holding is defined as a company being held in both stocks and bonds by at least one financial institution simultaneously. The issue of corporate tax avoidance has been deeply studied by many scholars since Hanlon and Heitzman (2010) defined corporate tax avoidance behavior. It is generally believed that the difference in corporate tax

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avoidance behavior is due to the varying degrees of conflicts of interest between creditors and shareholders in the company. For example, Badertscher et al. (2013), McGuire et al. (2014), and Khan et al. (2017) examine shareholder–management conflicts of interest surrounding tax avoidance practices in different settings. This paper prepares to start from dual holding and study the relationship between dual holding and tax avoidance. The reason for conducting this study is not only because the issue of dual holding is under-researched in existing academic articles, but also because no articles have researched the relationship between dual holding and tax avoidance.

Of course, the fact that no one has studied the relationship between the two does not mean it is worth studying. I believe that studying dual holdings and corporate tax avoidance behavior is of great importance. First of all, past research on corporate tax avoidance in corporate finance has focused on how the relationship between managers and shareholders affects corporate tax avoidance. But they ignored another important issue, that is, the conflict between creditors and shareholders in the company may also be a reason for the difference in corporate tax avoidance behavior.

Jensen and Meckling (1976) proposed the classic agency theory. It's easy to understand the conflict between creditors and shareholders under the framework of agency theory, the main source of the conflict comes from wealth transfer. Wealth transfer is considered to be the transfer of wealth from creditors by shareholders through asset substitution: the company engages in a series of risky behaviors to increase shareholder wealth at the expense of creditors' interests. Tax avoidance is usually considered one of the company's risky behaviors (e.g., Mills, 1998; Desai and Dharmapala, 2006; Hanlon and Heitzman, 2010; Hoopes et al., 2012; Arena et al., 2019). This is because if tax avoidance behavior is investigated by the IRS, the company will face a lot of reputation and fines, which may have a great impact on the company's operations and cash flow.

But corporate tax avoidance also creates wealth for the company. For shareholders, they are called residual claimants, they have a great motivation to encourage the company to engage in risky behaviors, and corporate tax avoidance is one of them. Because corporate tax avoidance can create a lot of wealth for the company, this wealth will generally be transferred to shareholders, because as creditors, what they can get is only the interest stipulated in the bonds they hold. In this way, the disagreement between the two parties on corporate tax avoidance behavior is very obvious. The company's shareholders hope that the company can increase risky behaviors through managers, in this way, once the risky projects are successful, the shareholders will make a lot of money. On the other hand, creditors do not want the company to engage in risky behavior, because the benefits brought by these risky behaviors are not attainable by creditors (because they only get fixed interest), but once risky behavior causes the company to suffer losses, this loss risk is shared by shareholders and creditors. This is also why creditors generally charge a higher cost of debt for companies that engage in a lot of tax avoidance behavior (Barnea et al., 1981; Isin, 2018).

However, I believe that after dual holdings, the antagonistic relationship between shareholders and creditors will be significantly alleviated. Because originally the two were "enemies" with opposing opinions on the issue of the company taking risky actions, but once the two become "family", that is, held by the same financial institution, the contradiction over the issue of wealth transfer naturally eases due to shared risk and

benefits. Therefore, I predict that now that both parties can enjoy the benefits of corporate tax avoidance, the strong opposition from creditors will certainly weaken, and naturally, corporate tax avoidance behavior will increase.

To explore my guess, I use a commonly used tax avoidance indicator, total book–tax difference (BTD), as a measure of how much a company avoids tax. BTD is the difference between pretax income and estimated taxable income, scaled by lagged total assets (Lisowsky, 2010; Goh et al., 2016). My baseline finding is that dual holding firms do indeed increase tax avoidance, as the BTD coefficient in the regression is significantly positive. In addition, to control for endogeneity issues involved in the study, we used a difference-in-differences analysis as a solution, using financial institution mergers as exogenous shocks to the presence of dual holders (Chu, 2018). I found that the baseline results also hold in the did test.

Finally, to further explore under what circumstances and through what channels dual holding affects corporate tax avoidance behavior, I conducted a cross-sectional test. I'm mainly interested in how corporate governance affects the corporate tax avoidance behavior of dual holding companies. Using whether the CEO also serves as the company's chairman of the board as a measure of corporate governance quality, I found that in companies where the CEO is duality, the impact of dual holding on corporate tax avoidance behavior is more pronounced. This suggests that the reason dual holding increases corporate tax avoidance is that after dual holding, the conflict of interest between the creditor and shareholder in the company is alleviated, reducing unnecessary conflicts and improving the quality of corporate governance.

The main contributions of this paper are twofold. The first is to find that dual holding companies do indeed have different tax avoidance behaviors. Specifically, dual holdings will cause companies to increase tax avoidance behavior, which corresponds to our prediction that the internal conflict between shareholders and creditors of the company will be relieved and wealth transfer will be reduced. The second contribution is that I found one of the reasons why dual holdings change corporate tax avoidance behavior is because after the company is dual held, shareholders and creditors become one, effectively alleviating the conflict between the two, and improving corporate governance to counter internal agency problems more effectively.

The rest of the paper is structured as follows: Section 2 mainly describes the acquisition of data and the establishment of variables. Section 3 presents the baseline results of this paper. Section 4 explores the channels through which dual holdings affect tax avoidance and conducts robustness checks. And Section 5 concludes the paper.

2 Data

Our study utilizes a comprehensive sample of public U.S. corporations with complete financial records, available in the integrated databases of the Center for Research in Security Prices (CRSP) and Compustat. The data concerning debt holdings is retrieved from the DealScan syndicated loan database, supplied by Thomson Reuters Loan Pricing Corporation. In parallel, equity holdings data is sourced from the Thomson/Refinitiv Institutional Holdings (13F) database. The goal is to pinpoint instances where both

equity and loan holdings occur simultaneously. More specifically, we leverage the DealScan database to recognize corporations that have an outstanding loan in a given year and to gather the associated lender information. Following this, we cross-match the lenders (or their parent organizations) with the institutional investors listed in the Thomson Reuters Institutional Holdings database, utilizing their names to determine whether the lenders (or their parent companies) also have equity investments in the same corporation. When a lender holds a minimum of 1% of the outstanding shares of the same corporation within the same year, we classify the lender as a dual holder.

Table 1 presents the distribution of the dual holding firms. In this table, we have listed the number of companies from 2001 to 2017 in which at least one institutional investor purchased both the company's stocks and bonds. The period from 2001 to 2017 can roughly be divided into three stages. The first stage, from 2001 to 2009, saw a gradual increase in the proportion of dual holdings. The second stage, from 2009 to 2011, saw a sudden drop in the proportion. In the third stage, from 2012 to 2017, the proportion began to rise gradually, only to decline again in 2017.

Between 2001 and 2017, the proportion of the same company's stocks and bonds being held by large investment institutions generally ranged between 20% and 25%. Among these, the proportion was highest in 2016, with 26.31% of companies having both stocks and bonds held, and lowest in 2011, with only 18.04% being held. In terms of numbers, the most companies - 707 - had both stocks and bonds held by institutional investors in 2004, while the fewest - 434 companies - were held in 2011.

Overall, the number and proportion of companies having both stocks and bonds held by institutional investors first increased and then declined overall in 2010, and then showed an upward trend again in 2012.

Table 1. Dual-Holding Percentage over Time

Year	# of Total Firms	# of Dual Holding Firms	% of Dual Holding Firms
2001	1,914	513	19.23%
2002	1,888	525	20.34%
2003	2,095	537	19.24%
2004	2,277	707	24.99%
2005	2,246	672	25.02%
2006	2,245	631	24.37%
2007	2,137	662	25.92%
2008	1,761	626	25.84%
2009	1,542	568	25.10%
2010	1,859	481	19.69%
2011	1,901	434	18.04%
2012	1,812	469	21.52%
2013	1,741	502	23.49%
2014	1,763	523	25.01%
2015	1,640	502	25.00%
2016	1,547	508	26.31%
2017	1,478	478	24.36%

I use the total tax difference (BTD) as the main measure for tax avoidance, which is defined as the Pretax income less the sum of current federal and foreign tax expenses divided by the statutory tax rate, scaled by lagged total assets.

In Table 2, we report the summary statistics for tax avoidance measures and other control variables for our sample. DUAL is an indicator variable that is set to 1 if a company has at least one dual holder in a given year; otherwise, it is set to 0. Basic statistical descriptions are provided for each variable used in the article. In this article, we have used a total of 34,576 samples from 2001 to 2017. BTD serves as an indicator of tax avoidance; DUAL is an indicator variable; Mean denotes the average; SD stands for standard deviation; Median signifies the median value; P25 and P75 respectively represent values obtained at the 25th and 75th percentiles in the data.

First, our main object of focus is tax avoidance, which we gauge through the BTD metric. Out of a total of 34,576 samples, the mean is 0.048, the standard deviation is 0.089, the median is 0.028, and P25 and P75 are 0.006 and 0.061, respectively. Secondly, the number of samples for DUAL is the same as that for tax avoidance - 34,576 - with a mean of 0.213, indicating that 21.3% of companies were identified as dual holders of both shares and bonds from 2001 to 2017. Finally, regarding other variables in the chart, such as SIZE, ROA, LEV, they all have a sample size of 34,576. Their averages are 6.275, 0.125, 0.174 respectively, with standard deviations of 2.361, 0.138, 0.197 respectively. These values are consistent with those in earlier studies (e.g., Cheng et al., 2012; Chen and Lin, 2017). The values of the control variables are also in the range of those reported in previous studies.

Table 2. Summary Statistics

	N	Mean	SD	P25	Median	P75
Measures of Tax Avoidance						
BTD	34576	0.048	0.089	0.006	0.028	0.061
Control Variables						
DUAL	34576	0.213	0.409	0	0	0
SIZE	34576	6.275	2.361	4.77	6.472	7.897
ROA	34576	0.125	0.138	0.051	0.096	0.161
LEV	34576	0.174	0.197	0	0.124	0.278
NOL	34576	0.757	0.429	1	1	1
DNOL	34576	0	0.195	0	0	0
FORINC	34576	0.015	0.03	0	0	0.019
CAPINT	34576	0.302	0.314	0.085	0.194	0.411
EQINC	34576	0.001	0.004	0	0	0
RD	34576	0.032	0.077	0	0	0.033
MTB	34576	2.778	9.337	1.285	1.81	2.781
SPI	34576	0	0.041	-0.007	0	0
Other Measures of Tax Avoidance						
ETR	55077	0.236	0.210	0.063	0.221	0.337
DDBTD	34496	0.002	0.078	-0.039	-0.015	0.020
SHELTER	30902	1.943	2.161	0.378	1.904	3.393

In this table, I report summary statistics and correlation for the variables used in our paper from 2001 to 2017. BTD is calculated by subtracting the combined current federal and foreign tax expenses from the pretax income, and then dividing this by the standard tax rate. This result is subsequently scaled by the previous year's total assets. DUAL is an indicator variable that equals one if a firm has at least one dual holder, and zero otherwise. Other variable definitions is shown in Appendix upon request.

3 Empirical Results

3.1 Baseline Results

This chapter mainly presents my empirical results. Firstly, Table 3 shows the baseline results of my research. From Table 3, it can be seen that the coefficient associated with dual is significant at the 1% level, indicating that dual holding firms significantly increase tax avoidance. Additionally, the signs of other control variables are also consistent with other research (e.g., Chen et al., 2010; Khurana and Moser, 2013), such as I found a reverse relationship between a company's ROA and BTD, while the company's Leverage ratio, tax-loss carryforward, equity income, R&D, market to book ratio, firm size, and special item all have a positive relationship with BTD.

Table 3. The Effect of Dual Holders on Corporate Tax Avoidance

Dep. Var.	BTD
	(1)
DUAL	0.004***
	(0.001)
ROA	-0.007***
	(0.000)
LEV	0.309***
	(0.108)
NOL	0.016**
	(0.008)
DNOL	0.018***
	(0.004)
FORINC	-0.005
	(0.006)
CAPINT	-0.027
	(0.062)
EQINC	0.020***
	(0.003)
RD	0.388**
	(0.155)
MTB	0.158***
	(0.025)
SIZE	0.001**

	(0.000)
SPI	0.444***
	(0.092)
Year & Firm FE	Yes
Observations	34,576
R^2	0.460

This table explores the impact of dual holding on corporate tax avoidance, employing Ordinary Least Squares (OLS) estimation. The dependent variable is Book-Tax Differences (BTD), which is calculated as the difference between pre-tax income and the combined current federal and foreign tax expenses, divided by the statutory tax rate, and then scaled by the lagged total assets. 'DUAL' is a binary variable that is assigned a value of one if a company has at least one dual holder in a particular year, and zero if not. Every model includes year and firm-fixed effects. For comprehensive definitions of the variables, refer to the Appendix. I report standard errors, clustered by the firm, beneath the coefficients. The asterisks *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

3.2 Endogeneity Issue

I understand the empirical complications associated with endogeneity issues. Using fixed effects for firms and years aids in controlling for unseen constant firm characteristics and common shocks that change over time. However, our findings might be skewed if we overlook characteristics of firms that change over time and are linked with the existence of dual holders, or if there's a reverse cause-and-effect relationship. For instance, there could be unseen firm attributes that concurrently dictate both the presence of dual holders and the tax strategies of firms. Another potential issue is the reverse causality that comes from institutional investors choosing to hold both the debt and equity of firms that adopt more aggressive tax strategies.

Taking a cue from Chu's (2018) study, I leverage the mergers between lenders and institutional shareholders within the same companies, viewing them as potentially exogenous shocks impacting the existence of dual holders. For identifying mergers among financial institutions, I start with all merger cases between any pair of financial institutions from 1990 to 2014, as recorded in the Securities Data Company (SDC) Mergers and Acquisitions Database. Along with the basic conditions put forward by Chu (2018), we also include supplementary criteria suggested by Yang (2021).

In terms of pinpointing treated firms involved in financial institution mergers, I start by identifying firms where one party of an institutional merger holds equity, and the other party holds debt prior to the merger. Then, I ensure that the lender involved in the merger has outstanding loans in the firm at the time the merger is announced and that the shareholder involved in the merger holds at least 1% of the outstanding shares in the firm before the merger announcement. Lastly, I omit situations where either the merging lender or the merging shareholder was a dual holder of the firm prior to the

merger. For identifying control firms, we locate firms where one party of the financial institution merger holds equity or debt, but the other party doesn't, prior to the merger.

Using the established treat and control variables, I employ the Difference-in-difference (DID) method to test the relationship between dual holdings and tax avoidance, and the results are shown in Table 4. From Table 4, it can be seen that the coefficient associated with Treat*Post is positively significant at the 10% level. The DID analysis shows that after taking care of endogeneity issues, the causal effect demonstrated by the DID method still shows a positive impact of dual holdings on tax avoidance, indicating that dual holdings are a reason for companies to increase tax avoidance behaviors.

Table 4. Controlling for Endogeneity Issues

Dep. Var	BTD
	(3)
TREAT*POST	0.008*
	(0.005)
TREAT	-0.004
	(0.005)
POST	0.001
	(0.002)
Other Controls	Yes
Year & Firm FE	Yes
Observations	3,909
R^2	0.733

This table presents the results of tests designed to address potential endogeneity concerns. By employing mergers between lenders and institutional shareholders within the same firms as plausible exogenous shocks to the presence of dual holders, I carry out a difference-in-differences analysis and display the estimation outcomes. For an in-depth explanation of the variables, refer to the Appendix. Standard errors, clustered by firm, are displayed beneath the coefficients. The asterisks *, **, and *** represent significance at the levels of 10%, 5%, and 1%, respectively.

4 Additional Analysis and Robustness Check

4.1 Additional Analysis

So far, I have found that dual holdings significantly increase a company's tax avoidance behavior. The next step is to explore through what channels dual holding companies influence tax avoidance behavior. Tax avoidance can increase shareholder wealth, but due to its high-risk nature, some companies do not or only minimally engage in tax avoidance behaviors. This is because these companies fear that in cases of poor corporate governance, the incentive for tax avoidance decreases as shareholders worry that

the money saved from tax avoidance might be misappropriated by managers (Armstrong et al., 2015). Therefore, I use whether the CEO also serves as the board chair, CEO duality, as an indicator of the quality of corporate governance. If the CEO also serves as the company's board chair, it equals 1; if not, it equals 0 (Elsayed, 2007). The results are shown in Table 5. I group the samples based on whether the CEO duality is 1 or 0 and then perform grouped regression. The results show that in the group where CEO duality equals 1, the baseline regression results indicate a significant positive correlation between dual holdings and BTD. In contrast, in the group where CEO duality equals 0, although the coefficient of dual is also positive, it is not significant. The grouped regression results suggest that the influence of dual holdings on tax avoidance is more significant in companies with weaker corporate governance. This suggests that dual holdings can positively influence a company's tax avoidance behavior by improving the quality of corporate governance.

Table 5. Corporate Governance

Dep. Var.	BTD	
	(1) CEO Duality=0	(2) CEO Duality=1
DUAL	0.001	0.005***
	(0.001)	(0.002)
Other Controls	Yes	Yes
Year & Firm FE	Yes	Yes
Observations	10,362	10,407
R^2	0.408	0.343

This table presents the findings from split-sample analyses based on the quality of corporate governance. I employ CEO Duality as an indicator for corporate governance quality. CEO Duality is a binary variable that equals one if the CEO concurrently serves as the Chairman of the Board, and zero if not. DUAL is a binary variable that assumes a value of one if a firm has at least one dual holder in a given year, and zero if it doesn't. A detailed definition of the variables can be found in the Appendix. All regressions include year and firm fixed effects. Standard errors, which are clustered by firm, are reported beneath the coefficients. The asterisks *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

4.2 Robustness Check

In this final subsection, I will perform a robustness check utilizing three frequently used measures of tax avoidance, namely, *CETR*, *DDBTD*, and *SHELTER*. *CETR* is calculated as the total tax expense minus the change in deferred tax, divided by pre-tax income. If the denominator is zero or negative, the value of the ETR variable is set as

missing. *DDBTD* represents Desai and Dharmapala's (2006) residual book-tax difference.

The regression results with these three measures of tax avoidance as dependent variables are shown in Table 6. In column 1 of Table 6, the coefficient for dual is significantly negative, indicating that dual holding companies increase tax avoidance because the higher the ETR, the higher the actual tax rate paid by the company. In Columns 2 and 3, the coefficients for dual are significantly positive, again indicating that dual holding companies increase tax avoidance because the higher the DDBTD and SHELTER, the higher the tax avoidance. Through these tests, I have proven that my findings are robust under different measures of tax avoidance.

Table 6. Robustness Check

Dep. Var.	ETR	DDBTD	SHELTER
	(2)	(4)	(5)
DUAL	-0.008**	0.002*	0.341***
	(0.003)	(0.001)	(0.029)
Other Controls	Yes	Yes	Yes
Year & Firm FE	Yes	Yes	Yes
Observations	55,077	34,496	30,902
R^2	0.083	0.377	0.677

This table presents the initial regression analyses utilizing alternative tax avoidance indicators. For comprehensive definitions of the variables, please refer to the Appendix. All regression models incorporate year and firm fixed effects. The standard errors, which are clustered at the firm level, are given beneath the coefficients. The symbols *, **, and *** demonstrate significance at the 10%, 5%, and 1% thresholds, respectively.

5 Conclusion

This study delves into the connection between firms with dual-holdings and their engagement in corporate tax evasion. Dual-holding is characterized as a scenario where a single financial institution concurrently holds both debt and equity in a company. The study reveals that firms with dual-holdings significantly amplify tax evasion activities. By employing mergers between the same firm's lenders and institutional shareholders as credible exogenous shocks, I account for the endogeneity issue, and my findings continue to remain consistent. Additionally, a cross-sectional study reveals a more pronounced increase in tax evasion activities by dual-holding companies when corporate governance is weak and when there is a lack of information transparency. These findings indicate that the distinctive tax evasion behaviors among dual-holding firms are attributed to channels of corporate governance and information.

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