Tax avoidance, managerial ownership, and agency conflicts

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Abstract

We examine how corporate tax avoidance is influenced by managerial ownership. Our results, based on a large sample of nearly 30,000 observations across a quarter of a century, demonstrate that firms where managers hold more shares exhibit less tax avoidance. Our findings corroborate the notion that corporate tax avoidance is primarily motivated by agency conflicts and is significantly mitigated by higher managerial ownership, which brings managers and shareholders' interests into better alignment. Further analysis corroborates the results, i.e., propensity score matching, an instrumental variable analysis, and using alternative measures of tax avoidance.

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I. Introduction

Tax avoidance is a critically important issue as it affects government revenue, public services, and public perception of corporate behavior and fairness in the tax system. Addressing tax avoidance is essential for maintaining a fair and efficient tax system and fostering public trust in corporations and governments. We investigate how corporate tax avoidance is influenced by managerial ownership. The separation of ownership and control in corporations leads to agency conflicts, where managers may prioritize their self-interest over shareholders' interests (Jensen and Meckling, 1976; Sewpersadh, 2019, 2022). An increase in managerial ownership, however, mitigates these conflicts, as managers bear higher costs for acting against shareholders. Thus, managerial ownership is widely considered a crucial governance mechanism to align managerial behavior with shareholder interests (Jensen and Meckling, 1976).

Several prior studies suggest that tax avoidance may be motivated by agency problems. For instance, prior research investigates the effect of corporate governance, which reduces agency conflicts, on tax avoidance (Armstrong et al., 2015). However, there is a lack of direct evidence on agency problems. We address this deficiency in the literature by studying how tax avoidance is influenced by managerial ownership, which is the root cause of the separation of ownership and control, and thus agency problems.

In theory, the impact of managerial ownership on tax avoidance hinges on its underlying motivation. We hypothesize that, if tax avoidance is driven by agency conflicts, higher managerial ownership should result in reduced tax avoidance as managers bear a higher cost of actions that reduce shareholder value when their ownership increases. Conversely, if tax avoidance is aimed at maximizing shareholder wealth, an increase in managerial ownership would likely lead to more tax avoidance as managers gain more from tax avoidance as their ownership rises. Our results

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reveal the significant influence of managerial ownership as a determinant of tax avoidance, providing crucial insights into the motivation behind tax behavior in companies.

Our study enriches the literature on tax avoidance and agency theory (Dyreng and Hanlon, 2019; Armstrong et al., 2015; Desai and Dharmapala, 2009; Dyreng, Hanlon, and Maydew, 2010; Cabello et al., 2019; Ogbonna et al, 2022; Tanko et al., 2022) by providing direct evidence linking managerial ownership to tax avoidance, supporting the idea that tax avoidance is partly driven by agency conflicts. Additionally, by examining the impact of managerial ownership on tax avoidance, we offer a more direct test of the agency explanation for tax avoidance, contributing to the broader discourse on agency conflicts and corporate outcomes (Jensen, 1994; Bitler et al., 2005; and Berger and Patti, 2006).

II. Brief literature review

The division between ownership and control within corporations gives rise to agency conflicts, as managers might place their own interests ahead of those of the shareholders, as noted by Jensen and Meckling (1976). Agency theory has recently been extended, with principals increasingly adopting governance mechanisms aimed at aligning the interests of the agency with their own. This alignment not only ensures goal congruence but also effectively reduces agency costs, as noted by Sewpersadh (2019). Building on this notion, Sewpersadh (2022) posits that share ownership is instrumental in harmonizing the interests of agents and principals, consequently leading to a reduction in agency costs, behaviors that do not maximize value, and risky investments. In the context of our study, tax avoidance can be viewed as an example of non-value maximizing behaviors. Therefore, equity ownership emerges as a vital tool, promoting proactive engagement in the governance of an organization.

Furthermore, our study is related to the principles of shareholder theory, which posits that management's primary objective is to maximize shareholder wealth, a concept underscored by Berle and Means (1932) and Friedman (1962). This focus on shareholder wealth often motivates management to prioritize short-term strategies over sustainable, long-term value, as noted by Sewpersadh (2019). Within this framework, tax avoidance can be seen as a tactic that yields short-term gains.

Additional recent studies are also related to managerial ownership and tax avoidance. For example, Cabello et al. (2019), using a Brazilian sample, find that different levels of management ownership are associated with different levels of tax avoidance behavior. Ogbonna et al. (2022), studying Nigerian banks, find that share ownership and tax aggressiveness exhibit significant effects on the return on equity (ROE). Tanko et al. (2022) examine Nigerian firms in the oil and gas industry and document that managerial ownership has a significant positive effect on tax avoidance.

III. Data description and methodology

We obtain data on managerial ownership from the EXECUCOMP database, which reports the ownership of the top five executives of the firm. Our data for tax avoidance calculations and for firm characteristics are from COMPUSTAT. Our final sample consists of 28,370 observations from 1996 to 2020. Our measure of managerial ownership is the combined percentage ownership of the top five executives.

In line with the existing literature, we adopt the cash effective tax rate (cash ETR) as our metric of tax avoidance. This measure is widely recognized as the most direct gauge of a firm's tax burden and has been extensively used in prior research (Edwards et al., 2016). To calculate the cash effective tax rate, we divide the cash taxes paid by the pre-tax book income before special

items. A higher cash ETR indicates less tax avoidance and vice versa. In our robustness checks, we also employ alternative measures of tax avoidance, i.e., GAAP effective tax rate, book-tax differences, and permanent book-tax differences. These are common measures of tax avoidance in the literature (Wang et al., 2020)

Additionally, we carefully consider various firm-specific characteristics that might influence tax avoidance. These include firm size (the natural logarithm of total assets), profitability (EBIT divided by total assets), leverage (total debt divided by total assets), capital investments (capital expenditures divided by total assets), cash holdings (cash holdings divided by total assets), intangible assets (research and development (R&D) expenses divided by total assets, and advertising expenses divided by total assets), asset tangibility (fixed assets divided by total assets), dividend payouts (total dividends divided by total assets), and discretionary spending (selling, general, and administrative (SG&A) expenses divided by total assets). Table 1 shows the descriptive statistics of the variables.

Essentially, we estimate the following regression analysis:

Tax Avoidance$_{it}$ = α + β$_1$(Managerial Ownership)$_{it}$ + β$_2$(Controls)$_{it}$

where i indexes firms and t indexes years.

We execute a range of empirical strategies to enhance robustness. Specifically, we conduct a regression analysis incorporating industry and firm-specific fixed effects. Additionally, we utilize propensity score matching (PSM) and employ an instrumental variable analysis to strengthen our methodology. These empirical methods are widely used in the literature in this area (Arena, Wang, and Yang, 2021; Chen et al., 2022; Wen, Cui, and Ke, 2020).

IV. Results

The regression results are presented in Table 2. For the first two models, the dependent variable is cash ETR. Model 1 includes industry fixed effects based on the first two digits of SIC, whereas Model 2 incorporates firm fixed effects, which help control for time-invariant unobservable characteristics that may be omitted in the model and thus mitigate endogeneity. The coefficients of managerial ownership both in Model 1 and Model 2 are significantly positive. Model 3 uses the GAAP ETR as an alternative measure of tax avoidance. Again, the coefficient of managerial ownership is significantly positive in Model 3.

To further address endogeneity, we use propensity score matching (PSM). We classify observations with the highest managerial ownership as the treatment group and find similar observations in the rest of the sample based on ten firm-specific attributes (the ten firm-specific control variables in the regression analysis). This approach ensures that our treatment and control groups are comparable in all observable aspects, except for managerial ownership. Model 4 is the regression result based on PSM. The coefficient of managerial ownership remains significantly positive. We also implement entropy balancing, where we adjust the weight of each variable such that the means and variances of the treatment and control groups are similar. The result remains consistent (not shown but available upon request).

Additionally, we perform an instrumental-variable analysis (IV) to mitigate endogeneity further. We exploit the insight that companies tend to attract local shareholders geographically (Coval and Moskowitz, 2001; Massa and Simonov, 2006). Therefore, companies located nearby share similar local shareholder pools and thus similar ownership characteristics. Our instrumental variable is the average percentage of managerial ownership of all firms in the same state. To reduce endogeneity, we exclude firm i from the calculation of the average. The average managerial ownership at the state level should explain firm-specific managerial ownership but is unlikely

correlated with firm-specific tax avoidance as there are many firms in the same state. Essentially, we exploit the variation in managerial ownership across geographic areas and estimate the effect of managerial ownership on tax avoidance.

Model 5 shows the result of the second-stage regression. The coefficient of managerial ownership instrumented from the first stage is significantly positive, once again confirming that more managerial ownership results in reduced tax avoidance.[1]Finally, for further robustness, we employ three alternative measures of tax avoidance, i.e., book-tax-differences, permanent book-tax-differences (Goh et al., 2016; De Simone et al., 2020), and tax sheltering (Wilson, 2009).[2] The results are shown in Table 3. The coefficients of managerial ownership are significantly negative, suggesting that more managerial ownership brings about less tax avoidance. As we incorporate a range of diverse measures to assess tax avoidance and consistently obtain similar results, our findings exhibit a high degree of robustness and reliability.

Our results fill the gap in the literature where there is a lack of direct evidence on agency problems in the context of tax avoidance. Whereas prior studies examine related issues, such as corporate governance, known to mitigate agency conflicts, direct evidence on agency problems is sparse. We address this void in the literature by showing that tax avoidance is significantly influenced by managerial ownership, which is the origin of the separation of ownership and control, and thus agency conflicts.

V. Conclusions

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[1] For further robustness, we also use two alternative instrumental variables. First, we employ the average managerial ownership of all firms in the same city, rather than the state, and the average managerial ownership of all firms in the same industry (based on the first two digits of SIC). The results remain similar.

[2] We estimate book-tax difference and permanent book-tax difference using the method in De Simone et al. (2020). For tax sheltering, we follow Wilson (2009). These measures of tax avoidance are widely used in the literature. More information about the construction of these measures can be found in De Simone et al. (2020) and Wilson (2009).

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Grounded in agency theory, our study sheds light on the motivation behind corporate tax avoidance by examining the impact of managerial ownership. Agency theory recognizes managerial ownership as a crucial governance mechanism that brings into closer alignment the interests of shareholders and managers. We find that larger managerial ownership leads to diminished tax avoidance, implying that tax avoidance is primarily motivated by agency conflicts and is reduced when shareholders and managers' interests are better aligned. Further analysis corroborates the results, i.e., propensity score matching, an instrumental variable analysis, and using several alternative measures of tax avoidance.

Our research provides valuable practical implications for various stakeholders. First, shareholders gain insights into the motivation behind tax avoidance, enabling informed decision-making to reduce it. Second, regulators and policymakers benefit from understanding the agency conflicts driving tax avoidance, aiding in the formulation of effective corporate taxation laws and regulations. Additionally, investors and creditors can make more informed assessments of companies by considering their tax avoidance and managerial ownership, thus mitigating tax-related risks.

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Table 1: Summary statistics

	Mean	SD	25th	Median	75th
Tax Avoidance					
Cash Effective Tax Rate	0.245	0.167	0.120	0.239	0.339
GAAP Effective Tax Rate	0.277	0.258	0.231	0.332	0.378
Managerial Ownership					
Managerial Ownership	0.029	0.062	0.000	0.005	0.022
Firm-specific Attributes					
Ln (Total Assets)	7.484	1.665	6.302	7.377	8.563
EBIT/Total Assets	0.107	0.128	0.066	0.101	0.149
Total Debt/Total Assets	0.240	0.216	0.066	0.223	0.355
Capital Expenditures/Total Assets	0.054	0.055	0.020	0.038	0.068
Cash Holdings/Total Assets	0.148	0.168	0.026	0.083	0.211
Advertising/Total Assets	0.013	0.032	0.000	0.000	0.009
R&D/Total Assets	0.026	0.051	0.000	0.000	0.031
Dividends/Total Assets	0.015	0.030	0.000	0.004	0.020
SG&A/Total Assets	0.223	0.218	0.073	0.174	0.316
Fixed Assets/Total Assets	0.522	0.392	0.211	0.421	0.763

Table 2: The effect of managerial ownership on tax avoidance

	(1)	(2)	(3)	(4)	(5)
	Industry Fixed Effects	Firm Fixed Effects	Firm Fixed Effects	PSM	IV
	Cash ETR	Cash ETR	GAAP ETR	Cash ETR	Cash ETR
Managerial Ownership	**0.078*****	**0.047***	**0.081****	**0.074****	
	(3.601)	**(1.824)**	**(2.561)**	**(2.234)**	
Managerial Ownership (Instrumented)					**0.013*****
					(6.932)
Ln (Total Assets)	0.004***	0.029***	0.031***	0.037***	0.013***
	(3.770)	(6.328)	(4.071)	(5.133)	(4.737)
EBIT/Total Assets	0.113***	0.035**	0.180***	0.068***	0.054***
	(4.226)	(2.710)	(6.682)	(3.754)	(4.727)
Total Debt/Total Assets	-0.056***	-0.000	-0.042**	-0.006	-0.021***
	(-6.124)	(-0.006)	(-2.257)	(-0.397)	(-2.682)
Capital Expenditures/Total Assets	-0.250***	-0.065	0.145***	-0.065	-0.015
	(-5.808)	(-1.379)	(3.056)	(-0.962)	(-0.482)
Cash Holdings/Total Assets	-0.113***	-0.081***	0.031	-0.046**	-0.103***
	(-8.559)	(-4.971)	(1.035)	(-2.245)	(-8.894)
Advertising/Total Assets	-0.085*	0.022	-0.174	0.116	0.046
	(-1.779)	(0.263)	(-1.417)	(1.029)	(0.602)
R&D/Total Assets	-0.336***	0.149**	0.287**	0.281**	0.164***
	(-8.270)	(2.349)	(2.659)	(2.277)	(3.343)
Dividends/Total Assets	0.251***	0.109**	-0.016	0.020	0.147***
	(4.719)	(2.284)	(-0.189)	(0.353)	(3.267)
SG&A/Total Assets	0.055***	0.049***	0.089***	0.077***	0.047***
	(5.597)	(3.281)	(3.483)	(4.361)	(3.816)
Fixed Assets/Total Assets	-0.011	0.001	-0.011	0.001	-0.009
	(-1.642)	(0.064)	(-0.903)	(0.084)	(-1.097)
Constant	0.241***	0.022	-0.002	-0.023	
	(21.473)	(0.585)	(-0.027)	(-0.413)	
Industry Fixed Effects	Yes	No	No	No	No
Firm Fixed Effects	No	Yes	Yes	Yes	Yes
Observations	28,370	28,128	28,128	13,711	28,124
Adjusted R-squared	0.113	0.288	0.173	0.353	0.288

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: The effect of managerial ownership on tax avoidance using alternative measures

	(1)	(2)	(3)
		Permanent	
	Book-Tax Difference	Book-Tax Difference	Tax Shelter
Managerial Ownership	**-0.026****	**-0.020****	**-0.449****
	(-2.603)	**(-2.464)**	**(-2.229)**
Ln (Total Assets)	0.001	0.002*	0.743***
	(0.728)	(1.760)	(13.950)
EBIT/Total Assets	0.175***	0.136***	4.221**
	(5.925)	(6.455)	(2.488)
Total Debt/Total Assets	-0.019***	-0.012***	-2.027***
	(-5.048)	(-3.506)	(-16.829)
Capital Expenditures/Total Assets	0.070***	0.004	0.813
	(3.943)	(0.377)	(1.141)
Cash Holdings/Total Assets	0.003	0.005	0.186
	(0.546)	(0.862)	(0.755)
Advertising/Total Assets	-0.071	-0.067*	-4.502**
	(-1.574)	(-1.939)	(-2.106)
R&D/Total Assets	-0.145*	-0.143**	-9.516
	(-1.862)	(-2.198)	(-1.604)
Dividends/Total Assets	0.050**	0.035*	-1.542
	(2.502)	(2.008)	(-0.839)
SG&A/Total Assets	0.024	0.027	2.898
	(0.790)	(1.328)	(1.566)
Fixed Assets/Total Assets	-0.010**	-0.004	-0.527*
	(-2.378)	(-1.418)	(-1.883)
Constant	-0.002	-0.011	-3.553***
	(-0.179)	(-1.114)	(-8.093)
Firm Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	27,557	27,554	28,128
Adjusted R-squared	0.290	0.293	0.602

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1