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ASSESSING THE IMPACT OF INTERNAL GOVERNANCE MECHANISMS ON THE TAX AGGRESSIVENESS OF LISTED COMPANIES IN MOROCCO

Abstract

This study examines how internal governance mechanisms influence tax aggressiveness among listed companies in Morocco. Using a quantitative approach, the study applies linear regression analysis to panel data from 2018 to 2022. The analysis assesses the impact of key governance factors, such as ownership concentration, board size, board independence, CEO duality, firm performance, and firm age, on tax aggressiveness.

The findings indicate significant relationships between governance mechanisms and tax behavior. Ownership concentration is negatively associated with the effective tax rate, implying that firms with a dominant shareholder are less likely to engage in aggressive tax planning. Conversely, financial performance is positively linked to effective tax rate, suggesting that more profitable firms tend to comply with tax obligations. In the current effective tax rate model, board size, board independence, CEO duality, and financial performance are positively related to tax aggressiveness, while firm age has a negative effect. The book-tax difference model reveals that board independence and CEO duality reduce tax aggressiveness, whereas ownership concentration and financial performance increase it.

These results highlight the significant role of corporate governance in shaping tax strategies. Strengthening governance structures – especially by reinforcing board independence and limiting CEO duality – could help curb aggressive tax practices and promote greater fiscal transparency in Morocco's financial market.

Keywords

governance, tax aggressiveness, ownership, board,
financial performance, Morocco

JEL Classification

G30, H26, O16

INTRODUCTION

Tax compliance is a major issue for Moroccan tax authorities given the importance of tax revenues to the government, which account for about 90% of the ordinary revenues of the general budget (Belahouaoui & Attak, 2025). In 2013, the General Tax Administration launched a compliance labialization program offering preferential treatment to companies demonstrating good behavior in terms of tax responsibility, respecting their tax obligations, and having good governance (General Tax Administration, 2013).

In 2024, the DGI initiated a new strategy for the period 2024–2028. This plan focuses on mobilizing the tax revenues necessary to finance public policies and enhance the country's resilience in response to various internal and external challenges. It also underscores a crucial aspect of the mission, which is the consolidation of a fair tax management system that

ensures compliance and provides efficient, quality, and transparent service. This new strategy is part of the new tax reform Framework Law 69-19 undertaken in Morocco (Belahouaoui & Attak, 2024; Kingdom of Morocco, 2021).

Internationally, the estimate of the report on annual tax avoidance and evasion in countries around the world increased by 17%, from 472 billion US dollars in 2022 to 480 billion US dollars in 2023. In Morocco, this represents a significant problem with an estimated annual tax loss of 9,825 million US dollars (TJN, 2023). This loss is mainly due to tax evasion and avoidance, as well as the poor performance of the tax administration in collecting tax revenues (Belahouaoui & Attak, 2023; Doghmi, 2020).

The issue of tax aggressiveness has garnered significant attention due to its implications for public finance, economic stability, and corporate governance. In emerging financial markets like Morocco, where listed companies play a pivotal role in driving economic growth, the relationship between internal governance mechanisms and tax practices is a critical area of inquiry. Effective governance frameworks are essential for ensuring transparency and mitigating the risks associated with aggressive tax planning, which often exploits regulatory gaps and undermines public trust in fiscal systems. Despite the efforts of Moroccan tax authorities, such as strategic reforms, challenges persist in addressing tax avoidance and enhancing corporate fiscal responsibility.

The problem addressed in this study lies in understanding how internal governance mechanisms influence the tax aggressiveness of Moroccan listed companies. While international studies have extensively examined the role of governance in shaping corporate behavior, limited attention has been given to the context of emerging markets like Morocco, where governance practices are still evolving.

1. LITERATURE REVIEW

The board size refers to the total number of members constituting the board of directors. This aspect impacts both the board's ability to provide strategic guidance and its effectiveness in overseeing the company's operations. The influence of board size on corporate governance effectiveness is a topic of debate. Regarding tax aggressiveness, Boussaidi and Hamed (2015) highlighted a positive correlation between the size of the board and the tax aggressiveness strategies implemented by firms. On the other hand, Halioui et al. (2016) argued that this link could stem from the challenges in coordinating a larger board, potentially weakening the oversight function. In contrast, Abdul Wahab et al. (2017) identified a negative impact of board size on tax aggressiveness. Meanwhile, Anggraeni and Kurnianto (2020) noted that a larger board size is positively related to tax aggressiveness, which means that the larger the number of directors, the more significant the tax aggressiveness in companies (Sugeng et al., 2020).

Previous studies on corporate governance and tax aggressiveness have emphasized that the board's

effectiveness is closely tied to its degree of independence. Ibrahim et al. (2003) emphasized the critical role of independent directors in mitigating managerial opportunism by ensuring robust oversight of the company's management practices. Similarly, Richardson et al. (2013) observed that a higher proportion of independent directors on the board significantly lowers tax aggressiveness in Australian publicly traded firms. However, given that the Moroccan context from 2020 requires that listed companies integrate independent administrators in their governing bodies, with most of these companies having two independent members on the board, and this number does not exceed a third of the total administrators, it is clear that the context differs significantly from those previously studied. This regulatory specificity of Morocco, combined with the substantial difference between the Moroccan context and those of the mentioned studies, suggests that the results of previous research cannot be directly applied to Morocco due to macroeconomic, social, and cultural divergences. A recent study by Boussaidi et al. (2021) revealed a significant positive impact of board independence on tax aggressiveness (Lanis & Richardson, 2012; Rao & Tilt, 2016; Richardson

et al., 2013). Accordingly, a similar positive relationship between board independence and tax aggressiveness is expected.

Gender diversity on boards of directors is recognized as an important factor for effective control and monitoring of companies, particularly in terms of tax compliance. Studies such as those by Adams and Ferreira (2009) and Kastlunger et al. (2010) have shown that women exert rigorous oversight over management and adopt a more disciplined approach to taxation. More recently, Moroccan legislation through Law No. 19-20 has promoted a minimum representation of women of 30% in boards by 2024, reinforcing the idea that female presence can lead to less aggressive tax practices and a greater commitment to corporate social responsibility. Recently, Vacca et al. (2020) suggested that women tend to exhibit stronger ethical values compared to men, and their inclusion on boards contributes to a reduction in aggressive tax practices while enhancing the company's commitment to corporate social responsibility and transparency.

The dual functions of CEO (Chief Executive Officer) and chairman have been extensively explored in relation to company performance. However, their influence on tax aggressiveness has been less frequently studied, leading to mixed and inconclusive results. For instance, Minnick and Noga (2010) observed that holding both roles negatively impacts tax management. In contrast, Halioui et al. (2016) identified a significant positive correlation between the CEO's dual role and tax aggressiveness. Meanwhile, Abdul Wahab et al. (2017) reported no significant effect of the CEO-chairman dual role on aggressive tax planning. Within a Tunisian context comparable to the Moroccan setting, Khaoula & Ali (2012) suggested that combining decision-making and oversight roles enhances tax optimization. Similarly, Boussaidi & Hamed-Sidhom (2021) identified a positive association between the dual role of CEO and chairman and tax aggressiveness.

The relationship between ownership structure and tax aggressiveness, frequently analyzed in developed markets with dispersed ownership, is examined here in the context of emerging markets, where ownership is typically concentrated.

According to Dakhlaoui and Gana (2020), Tunisian companies often exhibit ownership concentration in the hands of government-affiliated entities or family groups, granting them substantial control over corporate decisions and management. While such concentration can address certain agency conflicts between managers and shareholders, it simultaneously creates tensions between majority and minority shareholders (El Ghouli et al., 2018). Fan and Wong (2002) highlighted that concentrated ownership provides majority shareholders with opportunities to appropriate company resources to the detriment of minority shareholders. Desai and Dharmapala (2009) observed that firms with concentrated ownership are more likely to engage in tax avoidance practices. Recent studies by Boussaidi and Hamed-Sidhom (2021) confirmed the positive influence of ownership concentration on tax aggressiveness. Moreover, Richardson et al. (2016) suggested a U-shaped relationship, indicating that both low and high levels of ownership concentration can significantly impact tax aggressiveness (Zhou, 2011). The pursuit of increased after-tax company value and the potential for rent-seeking by majority shareholders can lead to the expropriation of minority shareholders, while enabling tax savings.

This study examines how internal governance mechanisms influence tax aggressiveness among listed companies in Morocco.

Based on the literature review, the following hypotheses are proposed:

H1: The size of the board of directors is positively associated with corporate tax aggressiveness.

H2: The independence of board directors is positively related to corporate tax aggressiveness.

H3: Gender diversity within the board of directors is negatively related to corporate tax aggressiveness.

H4: The duality of roles, where the CEO also serves as the board chairman, is positively associated with corporate tax aggressiveness.

H5: The presence of a majority shareholder is positively linked to corporate tax aggressiveness.

2. METHOD

The research methodology for this study relies on panel data obtained from annual reports of companies listed on the Casablanca Stock Exchange via its official website. Out of the 76 companies registered on the exchange, the sample for this study includes 52 companies (Table 1). The exclusion of certain companies is due to the lack of complete information, the recent nature of their establishment, or their belonging to the financial and insurance sectors (Ramadhani & Sitorus, 2022). This exclusion is justified by the specific regulatory environment of these sectors and because the indicator variables and ratios used in this study are calculated differently in these sectors compared to others chosen (industry, services, and trade). The sample selection criteria are consistent with methodologies used by Agoraki et al. (2023), Amri et al. (2023), and Boussaidi and Hamed-Sidhom (2021). The data cover the period from 2018 to 2022.

Selecting 52 companies from the 76 listed on the Casablanca Stock Exchange represents a substantial and representative cross-section of Moroccan listed companies. This selection is supported by an observation-variable ratio of about 6:1, respecting the minimum recommended ratio of 5:1 by Hair et al. (2019), which facilitates a rigorous statistical examination and reinforces the reliability of the analysis. The sample size directly influences the statistical power of the model, affecting the strength and confidence in detecting an effect if it exists, and also impacts the extent to which the results can be generalized to a broader context. This relationship underscores the importance of selecting a sample that balances the depth of analysis with the breadth of applicability. To support this approach, the study relies on recent research precedents in the Moroccan market that use similar sample sizes and methodologies, demonstrating the viability and relevance of this sample selection given the context of Morocco's developing stock market, which only includes 76 companies (Jabbouri & Attar, 2018).

Table 1. Companies by sector

Sector	Frequency	Observation	Percentage
Trade	9	45	17.31
Industry	28	140	53.85
Service	15	75	28.85
Total	52	260	100.00

The main objective of this study is to examine the potential link between corporate tax aggressiveness and internal governance mechanisms within the Moroccan context. For this purpose, specific variables have been established to investigate the connection between tax aggressiveness practices and governance mechanisms in Moroccan non-financial listed companies. In the proposed model, tax aggressiveness is assessed using three indicators, while internal governance mechanisms are evaluated based on the characteristics of the board of directors and selected control variables.

$$\begin{aligned}
 ETR_{i,t} = & \beta_0 + \beta_1 \cdot BSIZE_{it} + \beta_2 \cdot BIND_{it} \\
 & + \beta_3 \cdot BGD_{it} + \beta_4 \cdot DUAL_{it} \\
 & + \beta_5 \cdot ConShP_{it} + \beta_6 \cdot FSIZE_{it} \\
 & + \beta_7 \cdot ROA_{it} + \beta_8 \cdot AGE_{it} + \beta_9 \cdot LIQ_{it} + \varepsilon_{it}.
 \end{aligned} \tag{1}$$

$$\begin{aligned}
 CETR_{i,t} = & \beta_0 + \beta_1 \cdot BSIZE_{it} + \beta_2 \cdot BIND_{it} \\
 & + \beta_3 \cdot BGD_{it} + \beta_4 \cdot DUAL_{it} \\
 & + \beta_5 \cdot CONSHP_{it} + \beta_6 \cdot FSIZE_{it} \\
 & + \beta_7 \cdot ROA_{it} + \beta_8 \cdot AGE_{it} + \beta_9 \cdot LIQ_{it} + \varepsilon_{it}.
 \end{aligned} \tag{2}$$

$$\begin{aligned}
 BTG_{i,t} = & \beta_0 + \beta_1 \cdot TCA_{it} + \beta_2 \cdot ICA_{it} \\
 & + \beta_3 \cdot DIV_{it} + \beta_4 \cdot DUAL_{it} \\
 & + \beta_5 \cdot ConP_{it} + \beta_6 \cdot TAILLE_{it} \\
 & + \beta_7 \cdot ROA_{it} + \beta_8 \cdot AGE_{it} + \beta_9 \cdot LIQ_{it} + \varepsilon_{it}.
 \end{aligned} \tag{3}$$

The dependent variable in this study is corporate tax aggressiveness, which involves managing taxable income through aggressive tax strategies, encompassing both legal and illegal actions that deviate from the intent of the law (Lanis et al., 2017; Lanis & Richardson, 2011; Richardson et al., 2014). Tax aggressiveness serves as the primary variable for empirical analysis. To ensure the robustness of the findings, multiple proxies for tax aggressiveness are employed. The most widely used proxy is the Effective Tax Rate (ETR), defined as the ratio of total tax expenses to pre-tax income (Richardson et al., 2013), calculated as $ETR = \text{total tax expenses} / \text{pre-tax income}$.

Another proxy utilized is the Current Effective Tax Rate, which has been studied alongside emerging determinants of tax aggressiveness (Adela et al.,

2023). Additionally, the Cash Effective Tax Rate (CETR), calculated as the ratio of income tax currently payable to operational cash flow, is used as a secondary measure (Chyz et al., 2023; Gavius et al., 2022; Lanis & Richardson, 2012).

The Book-Tax Difference (BTD) has been identified as an additional measure of tax aggressiveness (Desai & Dharmapala, 2006; Mills, 1998). This measure is based on the observation that companies engaging in more aggressive tax strategies typically exhibit significant discrepancies between accounting income and taxable income (Frank et al., 2009; Lisowsky, 2010; Wilson, 2009). Unlike ETRs, the BTD reflects the impact of deferred taxation, providing a broader view of tax aggressiveness. As a third measure, BTD is calculated as the difference between pre-tax accounting income and taxable income, divided by total assets from the previous year (Hanlon & Heitzman, 2010).

This study explores how the internal governance structure influences corporate tax aggressiveness among Moroccan listed companies. Key variables include the size and independence of the board of directors, gender diversity, the dual role of the CEO, and ownership concentration (Table 2). These elements are essential for understanding how internal governance mechanisms can moderate aggressive tax strategies, highlighting the

importance of good governance in promoting responsible tax practices.

To evaluate the effect of governance mechanisms on aggressive tax strategies adopted by Moroccan listed companies, the study adopted a methodological approach that includes a series of statistical tests to select the most appropriate estimation methods for the analysis.

The data analysis process began with a preliminary analysis of the data to determine the basic characteristics of the sample of companies, such as minimum, maximum, mean, and standard deviation. Subsequently, an exploration of potential relationships between tax aggressiveness and independent variables related to governance mechanisms was conducted through a correlation study while remaining vigilant about the risk of multicollinearity. To this end, the variance inflation factor (VIF) test was applied to assess the impact of multicollinearity on the estimation of coefficients (Franke, 2010). A VIF greater than 10 was considered an indicator of problematic collinearity, necessitating model adjustment.

For the panel data analysis in this study, the fixed effects method was favored. This methodological choice is based on the assumption that unobserved and invariant characteristics over time for

Table 2. Variables measurement

Variables	Symbol	Measurement	Source
Dependent variable: Tax aggressiveness			
Effective Tax Rate	ETR	ETR = total tax charge / pre-tax income	Iazzi et al. (2023), Richardson et al. (2013)
Current Effective Tax Rate	CETR	CETR = current tax charge / operating cash flow	Chyz et al. (2023), Gavius et al. (2022)
Book-Tax Difference	BTD	BTD = (accounting income - taxable income) / total assets	Chen, Zhao, and Jin (2024), Richardson et al. (2014)
Independent variables			
Board Size	BSIZE	Number of directors on the board	Pfeffer (2019), Shamil et al. (2024)
Board Independence	BIND	Percentage of independent directors on the board	Lanis and Richardson (2011)
Gender Diversity	BGD	Percentage of women on the board	Lanis et al. (2017), Vacca et al. (2020)
CEO Duality	DUAL	1 if the chairman of the board is also the CEO of the company, 0 otherwise	Halioui et al. (2016), Kolas and Koumanakos (2022)
Ownership Concentration	CONSHP	1 if the percentage of capital held by the principal shareholder exceeds 50%, 0 otherwise	Salihi et al. (2015)
Control variables			
Firm Size	FSIZE	Natural logarithm of total assets	Derashid and Zhang (2003)
Firm Performance	ROA	Return On Assets: Net income / total assets	Velte (2017)
Firm Age	AGE	Number of years that have passed since the company was founded	Agoraki et al. (2023)
Liquidity	LIQ	General liquidity ratio: Current assets / current liabilities	Ann and Manurung (2019)

each company may influence decisions on tax aggressiveness. Adopting the fixed effects method allows for controlling these unobservable effects, thus providing a more accurate analysis of causal relationships. To confirm the relevance of this approach, several tests were performed, notably comparing the F-statistic of the fixed effects model to that of the ordinary least squares (OLS) model. A result showing a higher F-statistic for the fixed effects model than for the OLS model indicates that the fixed effects are significant, thus validating the choice of the fixed effects model as being the most appropriate for the analysis. Additionally, the Hausman test was applied to decide between the fixed effects model and the random effects model, further reinforcing the methodological decision.

Tests for heteroscedasticity, autocorrelation, and endogeneity were also conducted to ensure the robustness of the estimates. These diagnostics are essential for validating the underlying assumptions of the regression model and ensuring the integrity of the results obtained. Together, these methodological steps enhance the reliability of the analysis, allowing for a more confident interpretation of the impacts of corporate governance on the aggressive tax practices of Moroccan listed companies.

3. RESULTS

This section presents and analyzes the study's findings, offering insights into the observed trends and characteristics within the data. Table 3 summarizes the descriptive statistics for each variable included in the analysis.

Table 3. Descriptive statistics

Variable	Observations	Mean	Standard Deviation	Min	Max
ETR	250	.236	.345	-3.203	1.83
CETR	238	.142	.466	-3.613	2.249
BTD	250	.022	.021	-.006	.088
BSIZE	259	8.301	3.035	2	15
BIND	260	.158	.169	0	.9
BGD	260	.179	.141	0	.5
DUAL	259	.649	.478	0	1
CONSHP	259	.625	.485	0	1
FSIZE	253	12.217	1.594	8.636	15.781
ROA	251	3.297	7.486	-30.163	22.178
AGE	260	47.654	27.613	2	103
LIQ	253	1.456	1.409	.204	12.709

The dependent variable ETR shows that companies in the sample have an average of 0.236, with significant variation ranging from -3.203 to 1.83. This wide dispersion of effective tax rates may indicate notable differences in tax strategies adopted by these companies.

The mean for CETR is 0.142, ranging from -3.613 to 2.249, revealing marked heterogeneity in the management of cash tax payments by companies. The board independence (BIND) presents a high mean of 8.301, which may signify a preference for independent boards in Moroccan companies. The practice of CEO and chairman duality (DUAL) has a mean of 0.179, indicating a low prevalence of this practice. Ownership concentration (CONSHP) has a mean of 0.649, suggesting that the majority of the boards. The size of the firms (FSIZE) varies, with a mean of 12.217, reflecting a diversity in the size of the companies in the sample. The return on assets (ROA) averages 3.297, with financial performances ranging from very negative to strongly positive, showing a great variability among companies.

The mean of the age of the companies (AGE) and their liquidity (LIQ) seems to indicate a relatively symmetrical distribution. These observations contrast with those of the fiscal and governance variables, which display more asymmetric distributions, thus highlighting the complexity and diversity of practices within Moroccan listed companies.

The correlation coefficient between ETR and CETR (current effective tax rate) is 0.613, indicating a moderate positive correlation, which suggests that companies with a higher effective tax rate also tend to have a higher cash tax rate (Table 4). This is logi-

Table 4. Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) ETR	1.000											
(2) CETR	0.613	1.000										
(3) BTD	0.190	0.298	1.000									
(4) BSIZE	0.050	0.099	0.106	1.000								
(5) BIND	0.088	0.022	-0.031	0.214	1.000							
(6) BGD	0.062	0.093	0.031	0.100	0.235	1.000						
(7) DUAL	-0.050	-0.083	-0.129	-0.413	0.013	0.025	1.000					
(8) CONSHP	-0.148	-0.067	0.037	0.030	0.003	0.135	-0.035	1.000				
(9) FSIZE	0.075	0.155	0.093	0.308	0.022	0.031	-0.038	-0.011	1.000			
(10) ROA	0.284	0.337	0.645	0.143	0.062	0.157	0.020	-0.071	0.191	1.000		
(11) AGE	-0.032	0.014	0.103	0.252	0.210	0.191	-0.164	0.021	-0.116	0.105	1.000	
(12) LIQ	0.079	0.005	0.142	-0.150	0.126	-0.107	0.073	-0.228	-0.320	0.227	-0.058	1.000

cal since both measures are related to the tax burden of companies. The correlation between ETR and the dual role of CEO and chairman (DUAL) is negative (-0.050), although weak, suggesting that companies where these roles are separated might have a slight tendency to have lower effective tax rates, perhaps due to better governance and more rigorous control over management decisions, including those related to tax strategies.

The correlation between ownership concentration (CONSHP) and ETR is also negative (-0.148), which indicates that greater ownership concentration might be associated with lower effective tax rates. This could suggest that when ownership is more concentrated, major shareholders may have more influence over the company's tax strategy, potentially allowing for more aggressive tax management to minimize tax liabilities.

The company size (FSIZE) presents a slightly positive correlation with ETR (0.075), which could mean that larger companies tend to have slightly higher effective tax rates, perhaps due to their visibility and pressure to comply with tax regulations. In contrast, the age of the company (AGE) shows a negative correlation with ETR (-0.032), suggesting that older companies might have slightly lower effective tax rates, which could be the result of greater experience in managing tax affairs or the presence of favorable tax incentives for established businesses. These correlations can provide indications about the relationships between governance characteristics and corporate tax strategies, but they do not prove causality. Further analyses, such as regression models, would be necessary to better understand the dynamics between these variables.

Table 5. Variance Inflation Factor (VIF)

Variables	VIF	1/VIF
BSIZE	1.602	.624
BIND	1.193	.838
BGD	1.148	.871
DUAL	1.279	.782
CONSHP	1.086	.921
FSIZE	1.604	.624
ROA	1.23	.813
LIQ	1.423	.702
AGE	1.376	.727
Mean VIF	1.326	

The VIF values are employed to evaluate the presence of multicollinearity among the independent variables in the regression analysis (Table 5). As indicated, all variables display VIF values well below the cautionary threshold of 10, as highlighted by Dormann et al. (2013).

Table 6. Regression analysis for model (1)

Variables	ETR		
	Coef.	T-value	P-value
BSIZE	.000	0.06	.952
BIND	.23	1.03	.303
BGD	.123	1.03	.303
DUAL	-.048	-1.23	.219
CONSHP	-.098	-2.49	.014**
FSIZE	-.002	-0.10	.92
ROA	.013	4.74	.000***
AGE	-.001	-1.44	.151
LIQ	-.005	-0.41	.685
Constant	.293	1.53	.126
R-squared 0.118			
F-test 7.495			
Prob > F 0.000			
Observations: 249			

Note: *** $p < .01$, ** $p < .05$, * $p < .1$.

Table 6 presents the regression analysis of Model (1), where various factors were assessed to determine their influence on the ETR of companies, used here as a proxy for tax aggressiveness. The study reveals that board size, independence of directors, gender diversity, CEO duality, company size, company age, and liquidity do not show a statistically significant relationship with ETR, as indicated by high p-values exceeding the conventional significance threshold, suggesting that these variables are not strong predictors of the effective tax rate in this model. However, two variables stand out for their significant relationship with ETR. Ownership concentration shows a negative association with ETR (coefficient of -0.098 , $p = 0.014$), which could indicate that companies with greater ownership concentration might be more inclined to engage in aggressive tax optimization strategies. Furthermore, company performance, measured by ROA, is positively correlated with ETR (coefficient of 0.013 , $p < 0.001$), suggesting that more profitable companies tend to have a higher ETR.

The model as a whole explains approximately 11.8% of the variability in ETR, as indicated by the R-squared, and is statistically significant globally as per the F-test (7.495 with a p-value near 0). This global significance suggests that, despite the low contribution of most individual variables, the model captures significant effects on ETR.

Table 7. Regression analysis for model (2)

Variables	CETR		
	Coef.	T-value	P-value
BSIZE	.06	1.90	.063*
BIND	.466	1.70	.096*
BGD	.467	1.06	.294
DUAL	.067	1.91	.061*
CONSHP	-.155	-0.83	.41
FSIZE	.024	0.22	.828
ROA	.009	1.89	.064*
AGE	-.025	-1.88	.065*
LIQ	.003	0.20	.841
Constant	.247	0.17	.866
R-squared 0.149			
F-test 4.592			
Prob > F 0.000			
Observations: 237			

Note: *** $p < .01$, ** $p < .05$, * $p < .1$.

Table 7 illustrates the regression analysis for the second model, which focuses on the impact of various governance and performance variables

on the CETR, conceptualized as the proportion of the current tax charge relative to operational cash flow. In this model, it appears that certain characteristics of the board of directors exert a significant influence on the CETR, which serves as a measure of tax aggressiveness. In the analyzed model, variables such as board size (BSIZE), independence of directors (BIND), and the dual role of the CEO (DUAL) demonstrate a statistically significant correlation with CETR at a significance threshold of 10%. These results suggest that specific aspects of the board structure have a notable impact on corporate tax practices, underscoring the importance of these governance factors in modulating corporate tax strategies.

Financial performance, evaluated by the ROA, shows a positive and significant correlation (coefficient of 0.009 , $p < 0.064$), suggesting that companies with better financial results tend to exhibit a higher CETR, which could signal a propensity for tax aggressiveness or better tax compliance. This relationship might reflect the increased capabilities of these companies to meet their tax obligations without resorting to tax avoidance strategies.

The second model, with an R-squared of 0.149, shows a slight improvement in predicting the variability of CETR compared to the first model. The overall validity of the model is attested by the F-test (4.592 with a p-value of 0.000), indicating that the variables taken together significantly influence the CETR even though individually they do not all display significance. This finding indicates that the cumulative effect of governance and performance variables can have a significant impact on CETR, despite the presence of substantial unexplained variability, as shown by the moderate R-squared.

Table 8 presents the regression analysis for the third model, which assesses tax aggressiveness using the BTD. This model evaluates the impact of governance mechanisms and performance factors on the book-tax differences, suggesting insights into the aggressive tax behavior of companies.

In this model, several variables show statistically significant relationships with the book-tax differences, indicating their influence on tax aggressiveness. The independence of directors (BIND)

and the dual role of the CEO (DUAL) are significantly related to BTD, with respective p-values of 0.001 and 0.006, indicating a negative relationship with tax aggressiveness, suggesting that greater independence and separation of CEO and chairman roles might reduce aggressive tax behaviors. Conversely, the ownership concentration (CONSHP) has a positive coefficient (0.004), indicating that higher ownership concentration might lead to more aggressive tax strategies, potentially as a means of maximizing shareholder value through tax savings.

Table 8. Regression analysis for model (3)

Variables	BTD		
	Coef.	T-value	P-value
BFSIZE	.000	-0.19	.85
BIND	-.018	-3.24	.001***
BGD	-.01	-1.49	.137
DUAL	-.006	-2.78	.006***
CONSHP	.004	2.12	.035**
FSIZE	-.001	-0.77	.441
ROA	.002	4.71	.000***
AGE	.000	0.21	.834
LIQ	.001	1.37	.172
Constant	.027	2.81	.005***
R-squared 0.470			
F-test 10.609			
Prob > F 0.000			
Observations: 249			

Note: *** $p < .01$, ** $p < .05$, * $p < .1$.

The company's financial performance, represented by ROA, is also significant, with a positive relationship with BTD (coefficient of 0.002, $p < 0.001$), suggesting that companies with better financial performance might engage in more aggressive tax planning. With an R-squared of 0.470, this model explains a substantial part of the variance in tax

aggressiveness, indicating a good fit and the significant explanatory power of the included governance and financial performance variables.

This robust model provides insights into how different governance structures and financial performance metrics impact corporate tax behaviors, highlighting important considerations for regulators and auditors seeking to identify companies with potentially higher levels of tax aggressiveness.

4. DISCUSSION

The purpose of this research is to analyze how internal governance mechanisms impact the tax aggressiveness of listed companies in Morocco. The analysis is based on a dataset of 52 companies listed on the Casablanca Securities Exchange, covering the period from 2018 to 2022, with a total of 260 annual observations. The study employs three key indicators, ETR, CETR, and BTD, that show an inverse relationship with tax aggressiveness; lower values of these indicators correspond to higher levels of tax aggressiveness. The findings highlight the significant impact of various factors, including board size, director independence, CEO role duality, ownership concentration, financial performance, and company age, on tax aggressiveness within the Moroccan context.

In the first model, using the effective tax rate as an indicator of tax aggressiveness, a negative and statistically significant relationship is observed between ownership concentration and tax aggressiveness. This suggests that holding a majority of voting rights by a single shareholder, exceeding

Table 9. Summary of hypothesis verification

Variables	Effect (1)	ETR	Effect (2)	CETR	Effect (3)	BTD
Independent variables						
BFSIZE	+	Not Supported	+	Supported*	+	Not Supported
BIND	+	Not Supported	+	Supported*		Supported***
BGD	+	Not Supported	+	Not Supported		Not Supported
DUAL	-	Not Supported	+	Supported*		Supported***
CONSHP	-	Supported**	-	Not Supported	+	Supported**
Firm-specific variables						
FSIZE	-	Not Supported	+	Not Supported		Not Supported
ROA	+	Supported***	+	Supported*	+	Supported***
AGE	-	Not Supported	-	Supported*	+	Not Supported
LIQ	-	Not Supported	+	Not Supported	+	Not Supported

Note: *** $p < .01$, ** $p < .05$, * $p < .1$.

51%, is likely to promote tax aggressiveness behaviors. Furthermore, financial performance, measured through asset returns (ROA), shows a positive and significant correlation with tax aggressiveness, indicating that financially successful companies tend less to resort to tax aggressiveness to reduce their tax burden and thus improve their net result.

In the second model, where tax aggressiveness is evaluated using the current effective tax rate, the findings reveal that an increase in board size has a positive and significant effect in mitigating tax aggressiveness. This suggests that a larger number of board members is associated with a reduction in aggressive tax behaviors. Additionally, the presence of more independent directors on the board appears to contribute significantly to decreasing tax aggressiveness within firms. The duality of roles between the CEO and chairman of the board shows a positive correlation with reduced tax aggressiveness, implying that concentrating authority in a single individual can help curb aggressive tax practices. Regarding financial performance, a positive relationship is observed, indicating that stronger financial results are linked to a reduction in tax aggressiveness. On the other hand, the company's age demonstrates a negative and significant impact on tax aggressiveness, suggesting that older, more experienced firms are more likely to engage in aggressive tax practices. This behavior could be attributed to their deeper understanding of the intricacies and loopholes in the tax system, which allows them to optimize their tax burden more effectively.

In the third model, which evaluates tax aggressiveness by analyzing the gap between accounting income and taxable income relative to the company's assets, several key findings are identified. A negative and significant relationship is observed between board independence and BTG, suggesting that a higher proportion of independent board members is associated with a lower BTG, indicating increased tax aggressiveness. This could imply that independent boards may not effectively discourage aggressive tax practices and might even enable or tolerate them. Similarly, the separation of the roles of CEO and chairman of the board, known as

the duality of functions, is negatively linked to tax aggressiveness. This suggests that when these roles are divided, it can help curb aggressive tax strategies. Conversely, ownership concentration demonstrates a positive relationship with tax aggressiveness, indicating that higher ownership concentration may encourage such practices. This could suggest that when the ownership structure is dominated by a majority shareholder, it could actually deter tax aggressiveness behaviors, contrary to the initial intuition that it could encourage them. Finally, financial performance has a positive and significant influence on tax aggressiveness. This may mean that financially performing companies tend to have better tax compliance and therefore resort less to tax aggressiveness, thereby contributing to better legitimate net results. In summary, these results indicate that corporate governance characteristics and performance indicators play complex and sometimes counter-intuitive roles in the tax strategies of Moroccan listed companies.

The findings reveal a complex relationship between corporate governance mechanisms and tax aggressiveness, with some results aligning with prior research, while others diverge due to contextual differences in the Moroccan market. The negative association between ownership concentration and tax aggressiveness contrasts with studies such as Desai and Dharmapala (2009) but aligns with Fan and Wong (2002), suggesting that majority shareholders can enhance oversight and limit aggressive tax strategies. The positive relationship between financial performance and tax compliance supports the findings of Richardson et al. (2016), indicating that more profitable firms prioritize long-term stability over tax avoidance. Board size and board independence play a significant role in mitigating tax aggressiveness, corroborating Abdul Wahab et al. (2017) and Richardson et al. (2013), though diverging from Boussaidi and Hamed-Sidhom (2021), who found a positive relationship between independent directors and tax aggressiveness. CEO duality is linked to reduced tax aggressiveness, contradicting Halioui et al. (2016) but supporting Minnick and Noga (2010), who argue that leadership concentration can enhance accountability. The book-tax dif-

ference model shows that independent boards may not always deter tax avoidance, in line with Lanis and Richardson (2012), while ownership concentration is positively associated with tax aggressiveness, supporting Dakhlaoui and Gana (2020). Overall, the results highlight that governance effectiveness is highly context-dependent, with emerging markets like Morocco exhibiting distinct corporate governance dynamics that influence tax strategies in unique ways.

CONCLUSION

This study investigates the impact of internal corporate governance mechanisms on the tax aggressiveness of Moroccan listed companies over the period 2018–2022. The results reveal significant relationships between governance structures and tax aggressiveness, as measured by indicators such as the effective tax rate (ETR), current effective tax rate (CETR), and book-tax differences (BTD). Specifically, ownership concentration appears to encourage tax aggressiveness, whereas strong financial performance and larger boards with independent directors tend to mitigate it. CEO duality is associated with reduced tax aggressiveness, while older firms demonstrate a greater tendency toward aggressive tax planning. These findings highlight the complexity of governance mechanisms and their varying effects on corporate tax strategies.

From a theoretical perspective, this study enriches the understanding of the interplay between corporate governance and tax aggressiveness by providing empirical evidence from an emerging market. The findings challenge conventional assumptions about governance effectiveness, particularly regarding board independence and ownership concentration, suggesting the need for a contextualized approach to agency theories and governance models in developing economies.

Practically, the study has direct implications for policymakers, investors, and corporate leaders. Regulators could consider refining governance frameworks to reduce incentives for tax aggressiveness, while investors may integrate governance structures into their risk assessment models. Corporate executives, in turn, can leverage these insights to develop tax strategies that balance compliance, shareholder value, and ethical considerations.

Future research should explore additional internal governance factors influencing tax aggressiveness, such as the role of internal audits, the expertise of audit committee members, and the combined effect of external and internal audits. Investigating the likelihood of tax audits by authorities could further enhance the understanding of corporate tax behavior. Additionally, examining the relationship between financial performance and tax compliance, and the impact of tax aggressiveness on firm valuation, could provide valuable insights into the long-term consequences of corporate tax strategies within the Moroccan economic landscape.

AUTHOR CONTRIBUTIONS

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