

The Nexus of Corporate Tax Avoidance and Firm Performance with the Moderating Effect of Ownership Concentration and Board Independence: Evidence from Developing Economies

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Abstract

Corporate tax avoidance is a legitimate strategy organisations use to reduce tax liability and enhance the firm's overall performance. Nevertheless, according to agency theory, managers use this approach to reduce the tax burden by using complex business transactions that enable them to pursue their interests. Consequently, there is a compelling need to investigate the relationship between corporate tax avoidance and firm performance. Furthermore, this paper also explores the moderating role of ownership concentration and board independence in the relationship between corporate tax avoidance and firm performance. The significance of this topic lies in its importance in improving corporate governance practices and regulatory policies to promote transparency and accountability in the business environment and improve the firm's performance, as the primary objective of every business is to improve its financial performance. To investigate the relationship, the sample of banking firms was taken from Pakistan, India, Bangladesh, and Sri Lanka from 2010 to 2021. The results using Pooled OLS, Random effect model and Fixed effect model depict a significant relationship between corporate tax avoidance and firm performance. Meanwhile, the indirect relationship between corporate tax avoidance and firm performance becomes more robust with the inception of ownership concentration. At the same time, board independence has an insignificant moderating effect on this relationship. The findings suggest that tax avoidance can enhance firm performance, but to fully realize its benefits, the firms must enhance their internal controls and management competencies. The study's findings advocate that tax policy must be transparent, and all companies must disclose their tax returns and associated information publicly. This information must include details about how accounting profits are adjusted to taxable

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profits, company-claimed reliefs, intragroup transaction records, related party dealings, and other relevant tax liability calculations.

Keywords: Corporate tax avoidance, firm performance, ownership concentration, Pakistan, India, Bangladesh, Sri Lanka.

1 Introduction

Taxation is considered the major source of fiscal revenue for governments. Numerous countries, especially in the developing world, need more stable revenue sources that make it challenging to fund essential projects. Meanwhile, profit maximisation is a tool used by various stakeholders to evaluate the performance of any business. It is a yardstick to evaluate the management's effectiveness in utilising available resources and the decisions to attain targeted profits (Almashhadani & Almashhadani, [2022](#)). However, corporate taxes are considered a substantial cost for individual businesses. Corporate tax avoidance is a strategy management uses to maximise the shareholders' wealth. Tax avoidance comprises legitimate tax planning and illicit tax evasion within a company's financial landscape. Legitimate tax planning includes the strategic reduction of a company's tax obligations through prudent investments and the strategic organisation of business operations within the parameters defined by tax laws. Nevertheless, certain businesses withhold tax payments to retain additional profit margins (Li et al., [2022](#)). Thus, tax avoidance exerts a significant influence on business performance. Therefore, conducting an in-depth exploration of its effects on firm performance is necessary.

Traditionally, tax avoidance represents a business strategy that diverts government resources to businesses and contributes to overall firm performance (Khuong et al., [2020](#)). Consequently, substantial subjective evidence suggests that tax avoidance unavoidably impacts firm performance. Conversely, tax avoidance entails various associated costs, such as influence on the corporate image, implementation expenses, and legal claims if regulatory bodies detect these practices (Abid & Dammak, [2022](#)). Therefore, deciding to be involved in tax avoidance becomes challenging for the company, which requires careful consideration to balance its advantages and drawbacks.

The agency problem is faced by many modern organisations because of the separation of ownership and control. This separation creates opportunities for managers to exploit tax avoidance strategies for their gain, resulting in adverse effects on the financial performance of the firm (Wang et al., [2020](#)). Meanwhile, when powerful, concentrated shareholders are absent, the division between ownership and control gives rise to agency problems. This problem is inherent in any principal-agent relationship, where one party, known as an agent, performs his duties assigned by the other party, the principal. This dynamic can result in conflicts of interest among the principal (owners or shareholders) and the agent (managers). And concentrated shareholding significantly influences a company's operations and management (Nashier & Gupta, [2023](#)). Similarly, the board of directors oversees and guides the management team (Wen et al., [2020](#)). The board of directors can significantly protect shareholder interests by promoting organisational transparency (Guizani & Abdalkrim, [2021](#)).

Corporate tax avoidance has been considered a topic of significant interest in current years due to its potential implications for businesses and the broader economy. However, previous studies have yet to empirically investigate the relationship between corporate tax avoidance and firm performance at the larger scale of research in developing countries (Khuong et al., [2020](#)). Thus, this article seeks to provide a comprehensive analysis of how corporate tax avoidance practices can influence various aspects of firm performance. Ownership concentration and board independence are the two aspects of corporate governance. And the present study also explores

their moderating role in the relationship between corporate tax avoidance and firm performance.

The implications of this research are twofold. First, from a managerial perspective, understanding the potential impact of tax avoidance on firm performance can guide executives in making informed decisions about their tax strategies. Second, from a regulatory and policy standpoint, the findings could inform discussions about the need for more effective tax legislation and enforcement to ensure that companies contribute their fair share to public finances. Furthermore, this finding can assist policymakers and regulatory bodies in discerning the impact of ownership concentration structures, commonly found in developing markets, on corporate tax activities. Regulators can assess the effectiveness of taxation initiatives within companies characterised by concentrated ownership, as tax efforts in such firms may have implications for deteriorating financial performance.

Our paper is structured as follows: In Part 2, we delve into relevant literature and formulate our research hypotheses. Part 3 encompasses the definition and computation of essential variables, outlines the empirical model specification, delves into sample construction, and elaborates on data sources. Moving to Part 4, we scrutinise the results, subject them to robustness checks, and conduct additional tests. Finally, Part 5 offers our concluding remarks.

2 Literature review

Generally, corporate tax avoidance can be defined as the strategies that decrease a company's tax obligations compared to its earnings before taxes (Christensen et al., 2015). Businesses can quickly adjust their situation related to taxes (Kim et al., 2019). This adjustment can be done through various means, such as speeded depreciation, derivative securities, hybrid monetary securities, and deferred tax payments on overseas earnings (Belz et al., 2017). In practice, managers employ tactics to lessen tax obligations by manipulating and misclassifying items in financial reports. These tactics involve deferring and accruing assets, revenues, and expenses, as Mafrolla (2019) discussed. Additionally, more intricate methods for tax avoidance, such as delaying and timing tax payments, engaging in tax arbitrage across different tax categories, and exploiting revenue-related arbitrage, have been elucidated by Stiglitz (1986) and Slemrod & Yitzhaki (2002).

Tax avoidance, often regarded as a legal method of reducing a company's tax liability, involves utilising available tax loopholes, deductions, and incentives to minimise the amount of taxes paid. While tax avoidance is within the bounds of the law, its ethical and economic implications have sparked debates among policymakers, academics, and practitioners.

Previous research offers compelling evidence that effective tax avoidance strategies can significantly affect a company's financial performance (Zolotoy et al., 2021). To illustrate, Mills et al., (1998) found that a \$1 spending in tax arrangement can lead to a \$4 reduction in a firm's tax obligations. Furthermore, earlier literature underscores that unsuccessful tax avoidance can substantially impact a company's financial standing. Executives often perceive it as a risky decision with potentially detrimental consequences, as evidenced by ex-ante assessments (Armstrong et al., 2015).

2.1 Theoretical Framework

We delve into two fundamental theories that form the foundation of our study: the agency theory (Ross, 1973; Jensen & Meckling, 1976) and the stakeholder theory (Freeman, 1984). The agency theory, first formulated by Ross (1973) from a financial perspective, addresses the principal-agent problem. In Jensen & Meckling's research paper (1976), they describe the relationship between principal and agent in which one party, known as the principal, hires another person, called an agent, and delegates both tasks and some authority to him, who carries out these responsibilities. The agency theory explains that when both parties seek to maximise their utility, the agent may resist taking actions that align with the principal's interests, leading to conflict among internal

managers and external stockholders of business organisations. Consequently, the theory suggests that these manager' interests can reduce shareholders by minimising the firm's profit. (Jensen & Meckling, [1976](#)).

However, managerial decisions should focus on more than just working for the benefit of stockholders. Still, they should also consider the benefits of all other stakeholders, such as personnel, consumers, creditors, and the community (as outlined by Freeman, [1999](#)). Freeman ([1984](#)) additionally emphasised the pivotal role of these other stakeholders in the organisation's well-being, underscoring the importance of affording their interests the same significance as those of shareholders.

Hanlon and Heitzman ([2010](#)) defined tax avoidance as reducing the per dollar amount of tax of earnings before interest and taxed or cash flows. Increased cash flows may be obtained by reducing tax liabilities payable to the government, and the firm value will increase. Furthermore, large amounts and expansion due to increased cash flows can lessen the risk, reinforcing the firms' credit positioning and lowering the cost of capital. Nevertheless, it is observed that the positive significant relationship between tax avoidance and business performance exists only in those businesses where managers' interests are closely linked with the interests of stockholders and managers do not misuse business cash flows for personal gain. This means that organisations with a solid and adequate incentive program will be in a better position to benefit from tax sheltering (Khuong et al., [2020](#)).

The interplay of tax avoidance is intricately tied to the agency conflict that often arises between managers and shareholders. Within this dynamic, managers possess the potential for opportunistic behaviour, redirecting resources while pursuing tax avoidance strategies (Desai & Dharmapala, [2009](#)). Furthermore, surplus cash flows derived through tax-avoidance endeavours might, unfortunately, be misallocated by managers for personal interest, such as constructing personal empires. This misallocation will likely lead to a decline in the firm's overall value. These circumstances additionally intensify the agency expenses existing between managers and shareholders.

An internal corporate governance mechanism aimed at mitigating agency problems is ownership concentration. Ownership concentration pertains to the degree to which large individual investors hold shares in a company. In firms with substantial ownership concentration, majority shareholders are inclined to have stronger personal motivations to participate in corporate management actively (Cule & Fulton, [2013](#)). Furthermore, prominent investors often receive heightened monitoring incentives and possess greater decision-making authority. These significant shareholders are likely to be highly motivated to ensure the company's long-term success by aligning their interests with the organisation's objectives and pursuing value-enhancing initiatives for the benefit of all shareholders. Consequently, such value-driven decisions should result in amplified profits for minority and majority investors, fostering a shared control advantage.

2.2 Impact of Corporate tax avoidance on firm performance

Previous studies have empirically investigated corporate tax avoidance through a perception of cost-benefit analysis. This approach considers the advantages of lower taxes against the costs of intricate financial reporting, potential fines and penalties, damage to reputation, and regulatory implications. (Hanlon & Heitzman, [2010](#)). Asiri et al. (2020) support that, on average, a company preserves around four dollars in tax obligations for every dollar invested in tax planning. This finding emphasises tax avoidance as a value-creating activity, given its capacity to increase cash flows by reducing direct tax burdens. As tax expenses are typically considered a major expenditure on firms' income statements, it's logical to expect considerable advantages from effective tax planning. Robinson et al., ([2010](#)) propose that many companies consider their tax units as profit-generating center. Companies benefiting from cash flows resulting from tax avoidance might

encounter agency problems when they channel these cash flows into projects that do not enhance firm performance (Jensen, [1986](#)). Especially in the absence of proper surveillance (Shleifer & Vishny, 1997), managers could exploit their decision-making autonomy to their advantage when they act in their self-interest.

H1: *Corporate tax avoidance has a significant impact on firm performance.*

2.3 Ownership concentration moderates the relationship between corporate tax avoidance and firm performance

The previous research findings consistently highlight a negative relationship between tax avoidance and firm performance, primarily from concerns about maximized agency costs and information asymmetry (Zhang et al., [2017](#)). Desai and Dharmapala (2009) empirically find that tax avoidance has an insignificant influence on the firm's value. However, they stress that tax avoidance in firms characterized by greater institutional ownership (possessing suitable governance mechanisms) is significantly associated with firm performance. Their argument centres on the notion that agency problems initiated by tax avoidance are mitigated by greater institutional ownership, thereby enhancing firm performance.

H2: *Ownership concentration significantly moderates the relationship between corporate tax avoidance and firm performance*

2.4 Board independence moderates the relationship between corporate tax avoidance and firm performance

According to the agency's point of view, the efficiency of the board of directors in their monitoring role depends on their status as non-executive and independent directors. Moreover, an independent board of directors on corporate boards effectively mitigates potential conflicts of interest between management and shareholders (Karim et al., [2023](#)). Numerous empirical studies have incorporated board independence to investigate its moderating effect on the relevant relationships, with mixed findings (Duru et al., [2016](#); Moussa, [2019](#)). On the flip side, there is a contention that the unnecessary involvement of independent directors in routine business activities could allow administrators to exercise their roles with sufficient autonomy. The precise impact of an independent board of directors on the tax strategies of the firms remains to be determined beforehand. Independent directors may need more capability related to the business's tax strategy (Armstrong et al., [2015](#)).

Still, on the other hand, independent directors can provide valuable insights and expertise based on their experiences and industry knowledge, which can be instrumental in tax management. Aburajab et al. ([2019](#)) determined that increased board members' independence could decrease tax rates. Independent board members are expected to safeguard and align with the owners' interests, potentially influencing tax aggressiveness (Husnain et al., [2021](#)). These board members may also be inclined to allocate resources towards tax management to ensure the company's overall performance is in good standing. Conversely, studies such as Kajola ([2008](#)) and Peng ([2004](#)) discovered a non-significant connection between the ratio of external directors to the overall board composition and its influence on firm performance.

H3: *Board independence significantly moderates the relationship between corporate tax avoidance and firm performance*

2.5 Conceptual Framework

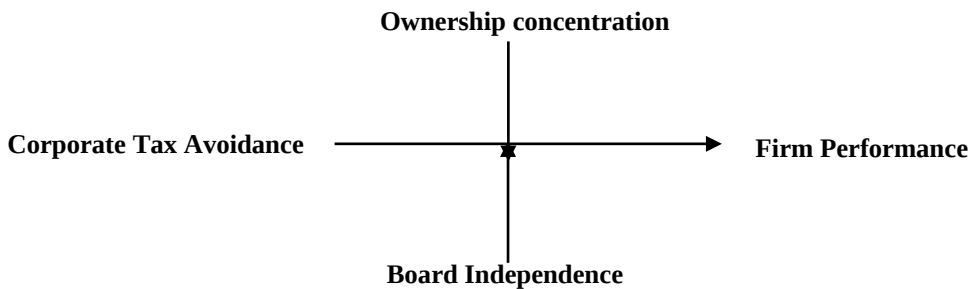


Figure 1: Conceptual Framework of study

3 Methodology

3.1 Research design

Pakistan, India, Sri Lanka, and Bangladesh are significant members of the South Asian Association for Regional Cooperation (SAARC). These countries are among the largest economies in South Asia, with their vast populations, geographical locations and diverse industrial sectors. They contribute significantly to the region's GDP and drive economic growth through trade, investment, and manufacturing activities. We sourced all the research data from financial statements retrieved from their websites. Our research sample consists of 91 banking companies in Pakistan, India, Bangladesh and Sri Lanka from 2010 to 2021. Because the financial firms operate under distinct business models and regulatory frameworks compared to companies in other industries (Khuong et al., 2020). Banking companies mainly disclose extensive financial information, including annual reports, financial statements, and regulatory filings. This availability of comprehensive data makes banking companies an attractive choice for empirical research. The data was obtained from the audited financial reports of the selected banking firms. These audited financial reports of the banking service chosen firms were acquired digitally by downloading them from their official websites.

3.2 Measurement of variables

Firm performance

Shen et al. (2016) have reported that return on assets (ROA), return on equity (ROE) and earning per share (EPS) serve as the most effective performance measures for businesses. The present study also adopted these performance measures. ROA was calculated as the ratio of net profit to total assets (Javeed & Lefen, 2019), providing insight into asset efficiency and management performance. Bhagat and Bolton (2008) suggested that a higher ROA signifies the efficient and effective utilisation of assets, thereby maximizing shareholder value. ROE, computed as the net profit ratio to shareholder equity (Ibrahim et al., 2010), is widely used in corporate governance-related research. From a shareholder's perspective, ROE is considered a superior metric for assessing a firm's operational performance. Earnings per share (EPS) signifies the segment of a firm's income after accounting for taxes and preferred stock dividends allocated to every common stockholder (Arsal, 2021).

Corporate tax avoidance

Tax avoidance involves the actions undertaken by a company to reduce the amount of tax that is obligated to be paid while staying compliant with relevant laws and regulations (Campbell & Helleloid, 2016). Effective tax rate (ETR) has been widely used to measure tax avoidance (Wen

et al., [2020](#)). The ETR is estimated as the ratio of total income tax expense by the earnings before interest and taxed (Wang et al., [2020](#)). A reduced amount of effective tax rate signifies a higher level of tax avoidance (Zolotoy et al., [2021](#)).

Ownership concentration

Ownership concentration is the percentage of share capital held by major shareholders. It is typically assessed by examining the three or five largest block holders (Pandey & Sahu, [2021](#)).

Board independence

Board independence refers to a measure of board composition, quantified as the ratio of independent board of directors to the total number of board of directors serving (Akbar et al., [2020](#)).

Control Variable

We use the control variables associated with the firm performance (Chen et al., [2010](#)). More giant corporations are more inclined to be involved in greater tax avoidance practices because of their increased economic and political power, allowing them to indulge in tax planning to minimise their tax liabilities (Gupta & Newberry, [1997](#)). So, the present study uses firm size (SIZE) as a control variable that can be measured by taking the logarithm of the firm's total assets, that is, the collection of current and non-current assets at the beginning of the accounting year. Leverage is another control variable of the present study, as previous literature empirically confirms that leverage has a positive significant relationship with tax avoidance because interest payments reduce the tax burden (Gupta & Newberry, [1997](#)). Leverage (LEV) is the ratio between total liabilities and assets (Lee & Bose, [2021](#)). Board size is another control variable of our study, measured by the number of directors sitting on the board at the annual shareholders meeting (Belkhir, 2009). The board can play an essential role in decision-making regarding the payment of taxes.

Table: 1 Variable Measurement

Variable	Symbol	Definition	Authors
Firm Performance	EPS	Net Profit/ Earnings available for common stockholders	Arsal, (2021)
	ROA	Net Profit/ Total Assets	Wang et al. (2020)
	ROE	Net profit/ Common shareholders' equity	Ibrahim et al. (2010)
Corporate tax avoidance	ETR	Tax expense/ Earnings before interest and taxes	Campbell & Helleloid, (2016), Wen et al. (2020), Wang et al. (2020), Zolotoy et al. (2021)
Ownership concentration	OC	Number of shares held by five largest shareholders/ Total number of shares outstanding	Pandey and Sahu, (2021)
Board Independence	BI	Total number of independent board of directors/ Total numbers of board of directors	Akbar et al. (2020)
Firm size	SIZE	Natural logarithm of total assets	Chen et al. (2010)
Leverage	LEV	Total debt / Total assets	Lee and Bose, (2021)
Board size	BS	Total number of board of directors	Belkhir, (2009)

3.3 Regression Model

To ascertain whether there's a connection between corporate tax avoidance and firm performance,

we employ the subsequent baseline model:

$$IROA_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 Size_{it} + \beta_3 Lev_{it} + \beta_4 BS_{it} + \varepsilon_0 \dots (1)$$

$$ROE_{it} = \beta_0 + \beta_1 ETR + \beta_2 Size_{it} + \beta_3 Lev_{it} + \beta_4 BS_{it} + \varepsilon_0 \dots (2)$$

$$EPS_{it} = \beta_0 + \beta_1 ETR + \beta_2 Size_{it} + \beta_3 Lev_{it} + \beta_4 BS_{it} + \varepsilon_0 \dots (3)$$

In the equations, ROA_{it} is returns on assets, used to measure the profitability of i th firm at time t . ROE_{it} represent return on equity, EPS_{it} represent earnings per share, ETR_{it} represent the effective tax rate of the firm i in year t , $Size_{it}$ represent the firm size, Lev_{it} represent the leverage and BS_{it} represent the board size. β_0 , β_1 , β_2 , β_3 , and β_4 represent the vectors of the parameters to be estimated, and ε_0 is the error term.

For moderation analysis of ownership concentration, we have the following three regression models:

$$ROA_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 OC_{it} + \beta_3 ETR_{it} * OC_{it} + \beta_4 Size_{it} + \beta_5 Lev_{it} + \beta_6 BS_{it} + \varepsilon_0$$

$$ROE_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 OC_{it} + \beta_3 ETR_{it} * OC_{it} + \beta_4 Size_{it} + \beta_5 Lev_{it} + \beta_6 BS_{it} + \varepsilon_0$$

$$EPS_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 OC_{it} + \beta_3 ETR_{it} * OC_{it} + \beta_4 Size_{it} + \beta_5 Lev_{it} + \beta_6 BS_{it} + \varepsilon_0$$

OC_{it} is the ownership concentration measured as the ratio of stock capital held by the five major shareholder of the firm i in the year t . and $ETR_{it} * OC_{it}$ is the interaction term between effective tax rate and ownership concentration?

For moderation analysis of board independence, we have the following three regression models:

$$ROA_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 BI_{it} + \beta_3 ETR_{it} * BI_{it} + \beta_4 Size_{it} + \beta_5 Lev_{it} + \beta_6 BS_{it} + \varepsilon_0$$

$$ROE_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 BI_{it} + \beta_3 ETR_{it} * BI_{it} + \beta_4 Size_{it} + \beta_5 Lev_{it} + \beta_6 BS_{it} + \varepsilon_0$$

$$EPS_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 BI_{it} + \beta_3 ETR_{it} * BI_{it} + \beta_4 Size_{it} + \beta_5 Lev_{it} + \beta_6 BS_{it} + \varepsilon_0$$

BI_{it} is the board independence can be calculated as the ratio of independent director on the total board of the firm i in the year t . and $ETR_{it} * BI_{it}$ is the interaction term between effective tax rate and board independence?

4 Result and discussion

4.1 Descriptive Statistics

Table 1 displays the summary statistics for the variables utilized in this study covering the period from 2010 to 2021. The mean value of ROA is 0.727, mean value of ROE is 8.673 and the mean value of EPS is 10.924. The mean of ETR is 0.295, the standard deviation is 0.318, its minimum value is -5.793 and the maximum value is 3.612. Similarly, the mean value of OC is 92.608, standard deviation is 41.361, while the minimum value is 1.012 and maximum value is 998.706.

And mean value of board independence is 0.543 and standard deviation 0.331.

Table 2: Descriptive statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA_{it}	1092	0.729	1.446	-7.970	9.75
ROE_{it}	1092	8.673	12.641	-74.985	62.043
EPS_{it}	1092	10.924	22.455	-26.598	154.020
ETR_{it}	1092	0.295	0.318	-5.793	3.612
OC_{it}	1092	92.608	41.361	1.012	998.706
BI_{it}	1092	0.543	0.331	0	1
$Size_{it}$	1092	26.852	1.485	19.974	31.512
Lev_{it}	1092	115.296	261.760	0.129	1653.742
BS_{it}	1092	9.330	2.843	3.000	23.000

Table 3 illustrates the Pearson's correlation matrix of the variables. To ensure the absence of significant multicollinearity issues among the independent variables, the Pearson correlation coefficient should remain below 0.8.

Table 3: Pearson's correlation matrix

Variables	ROA_{it}	ROE_{it}	EPS_{it}	ETR_{it}	OC_{it}	BI_{it}	$Size_{it}$	Lev_{it}	BS_{it}
ROA_{it}	1.000								
ROE_{it}	0.614 (0.000)	1.000							
EPS_{it}	0.213 (0.000)	0.276 (0.000)	1.000						
ETR_{it}	0.201 (0.000)	0.186 (0.000)	0.012 (0.689)	1.000					
OC_{it}	-0.019 (0.524)	-0.101 (0.001)	0.058 (0.056)	-0.020 (0.508)	1.000				
BI_{it}	0.089 (0.003)	0.038 (0.207)	0.131 (0.000)	-0.163 (0.000)	-0.032 (0.285)	1.000			
$Size_{it}$	0.188 (0.000)	0.186 (0.000)	0.347 (0.000)	-0.006 (0.753)	0.102 (0.001)	0.358 (0.000)	1.000		
Lev_{it}	-0.032 (0.287)	-0.009 (0.760)	0.295 (0.000)	-0.084 (0.006)	0.080 (0.008)	0.279 (0.000)	0.513 (0.000)	1.000	
BS_{it}	0.156 (0.000)	0.157 (0.000)	0.012 (0.697)	0.142 (0.000)	0.041 (0.173)	-0.261 (0.000)	-0.043 (0.154)	0.033 (0.279)	1.000

We utilized a Fisher augmented Dickey-Fuller test to assess the panel unit root for all the dependent, independent, and control variables to prevent spurious regression outcomes. Numerous researchers, including Singh & Kumar (2017), and Sharma et al., (2020), have previously documented the need to examine panel unit roots prior to conducting regression analysis. The results of Fisher augmented Dickey-Fuller test are presented in appendix 1 and it becomes evident that all the chosen variables in this study exhibit stationarity without time trends. Appendix 2 also provides the variance inflation factor (VIF) coefficients. We employed the VIF test to address multicollinearity, as it assesses the interrelationships among all independent variables (Singh & Kumar, 2017). High VIF values indicate higher level of multicollinearity among independent variables and multicollinearity becomes a significant problem when the VIF test value exceeds 10 (Gujarati & Porter, 2009; Nachane, 2006). In our study, it appears that there is no evidence of multicollinearity among the independent variables, as all VIF test values remain below 10. Appendix 3 presents the outcomes of the Breusch-Pagan/Cook-Wesberg test, which assesses the variance in the error terms (residuals) of the models. The results clearly indicate that all the models

exhibit no signs of heteroskedasticity. Also, the Jarque-Bera test is employed to evaluate the normality of the error terms within the models.

Tables 3 elaborate the results of assessing the impact of corporate tax avoidance on firm performance by employing ETR as the proxy of corporate tax avoidance and ROA as a proxy of firm performance. The results depict that there is no significant effect of corporate tax avoidance on firm performance in both the random effect model and fixed effect model of regression while only the pooled OLS elaborate the positive significant effect of ETR on the firm accounting performance indicating that reduced tax rates or increased corporate tax avoidance activities are likely to improve a company's accounting performance.

Our results are consistent with Wang, (2010) who investigate the direct association between corporate tax planning and firm performance because he suggests that the firms those are transparent in their information sharing are more inclined to involve in tax avoidance activities. Meanwhile Inger, (2013), also confirms that a significant positive relationship exists between corporate tax avoidance and firm performance by utilizing various techniques to measures of tax avoidance strategies.

Table 4: Pooled OLS, fixed effect and random effect result of impact of ETR on ROA

ROA_{it}	Pooled OLS	Fixed Effects	Random Effects
C	-7.454*** (0.882)	9.902*** (1.391)	3.829*** (1.206)
ETR_{it}	0.763*** (0.132)	-0.023 (0.101)	0.054 (0.103)
$Size_{it}$	0.274*** (0.033)	-0.359*** (0.051)	-0.137*** (0.044)
Lev_{it}	-0.001*** (0.000)	-0.001 (0.001)	-0.001 (0.001)
BS_{it}	0.076*** (0.015)	0.057*** (0.018)	0.064*** (0.017)
R2	0.115	0.013	0.047
Root MSE	1.362	-	-
F Statistics	35.384***	16.200***	-
Wald chi2	-	-	27.560***

*, **, *** denote the level of significance of 10%; 5% and 1% respectively

Table 4 elaborate the empirical results of the impact of corporate tax avoidance on firm performance by using ROE as the proxy of firm performance. The results depict that corporate tax avoidance has no significant impact on firm performance in fixed effect model of regression while shows the positive empirical impact on firm performance only at 1% level of significance in random effect method of regression. Similarly, method of pooled OLS regression again confirms the positive significant effect of corporate tax avoidance on firm performance at one percent confidence level.

Table 5: Pooled OLS, fixed effect and random effect result of impact of ETR on ROE

ROE_{it}	Pooled OLS	Fixed Effects	Random Effects
C	-58.839*** (7.764)	77.779*** (13.843)	15.553 (11.183)
ETR_{it}	6.147*** (1.162)	1.060 (1.001)	1.745* (1.008)
$Size_{it}$	2.242*** (0.286)	-2.848*** (0.508)	-0.542 (0.410)

<i>Lev_{it}</i>	-0.007*** (0.002)	-0.004 (0.003)	0.002 (0.002)
<i>BS_{it}</i>	0.670*** (0.130)	0.808*** (0.183)	0.791*** (0.165)
R2	0.103	0.004	0.013
Root MSE	11.997	-	-
Statistics	31.070***	14.310***	-
Wald chi2	-	-	30.180***

Table 6 depicts the result of relationship between corporate tax avoidance and firm performance by using EPS as a proxy of firm performance. Empirical findings confirm that ETR has no significant relationship with EPS in both pooled OLS regression model and random effect model, meanwhile confirm significant positive relationship only in fixed effect model of regression at 1% confidence level.

Table 5: Pooled OLS, fixed effect and random effect result of impact of ETR on EPS

<i>EPS_{it}</i>	Pooled OLS	Fixed Effects	Random Effects
C	-99.966*** (13.504)	91.503*** (27.503)	-40.001* (19.719)
<i>ETR_{it}</i>	1.762 (2.020)	3.377* (1.989)	2.434 (1.968)
<i>Size_{it}</i>	4.011*** (0.497)	-3.381*** (1.008)	1.613** (0.723)
<i>Lev_{it}</i>	0.013*** (0.002)	-0.008 (0.005)	0.010** (0.004)
<i>BS_{it}</i>	0.113 (0.225)	1.097** (0.364)	0.610** (0.301)
R2	0.139	0.101	0.118
Root MSE	20.866	-	-
Statistics	44.120***	6.600***	-
Wald chi2	-	-	23.490***

So overall it can be concluded that corporate tax avoidance has no significant association with all three-accounting measure of firm performance. It can be concluded that the presence of tax avoidance activities within a company does not have an impact on the firm's performance. Tax-related actions taken by companies do not raise concerns among investors. These findings suggest that investors primarily rely on financial ratios as indicators of company performance. This observation aligns with the findings of (Annisa & Chabachib, 2017). We examined how ownership concentration moderates the connection between corporate tax avoidance and firm performance. Table 6 displays the interaction between ownership concentration and corporate tax avoidance (OC*ETR). The results depict that ownership concentration positively moderate the relationship between corporate tax avoidance and firm performance in all three measures of firm performance i.e. ROA, ROE and EPS. Results indicates that significant positive coefficient of variation at 0.016, signifying significance at a 1% confidence level with ROA. And 0.109 positive coefficient of variation with ROA at 5% significance level. Meanwhile the results confirm the positive coefficient of variation of 0.222 with EPS at 1% significant level. These findings highlight a noteworthy and positive moderating influence of ownership concentration on the association between corporate tax avoidance and firm performance.

Table 7: Moderation impact of ownership concentration on the relationship between ETR and firm performance

	ROA _{it}	ROE _{it}	EPS _{it}
C	-7.311*** (0.880)	-57.269*** (7.699)	-98.542*** (13.486)
<i>ETR_{it}</i>	-0.542 (0.461)	-2.971 (4.037)	-16.494** (7.071)
<i>OC_{it}</i>	-0.003*** (0.001)	-0.052*** (0.011)	-0.020 (0.019)
<i>ETR_{it} * OC_{it}</i>	0.016*** (0.005)	0.109** (0.047)	0.222*** (0.082)
<i>Size_{it}</i>	0.280*** (0.032)	2.351*** (0.284)	4.024*** (0.498)
<i>Lev_{it}</i>	-0.001*** (0.001)	-0.006*** (0.002)	0.014*** (0.003)
<i>BS_{it}</i>	0.074*** (0.015)	0.675 (0.129)	0.064 (0.226)
R2	0.124	0.122	0.146
Root MSE	1.358	11.880	20.812
Statistics	25.510***	25.030***	30.850***

Table 8 shows the interaction between board independence and corporate tax avoidance (BI*ETR). The results depict that board independence does not moderate the relationship between corporate tax avoidance and firm performance in two measures of firm performance i.e. ROE and EPS. Meanwhile board independence negatively moderates the relationship between corporate tax avoidance and firm performance negative coefficient of variation at 0.918, signifying significance at a 1% confidence level with ROA as a measure of firm performance. The findings of this investigation align with prior research (Adams & Ferreira, 2009; Cho & Kim, 2007; Dalton & Dalton, 2005; Yasser et al., 2017), suggesting that the composition of the board, particularly in terms of external independent directors, does not play a significant role towards the performance of the firm.

Table 8: Moderation impact of board independence on the relationship between ETR and firm performance

	ROA _{it}	ROE _{it}	EPS _{it}
C	-7.166*** (0.889)	-57.616*** (7.881)	-100.024*** (13.733)
<i>ETR_{it}</i>	1.420*** (0.340)	8.549*** (3.011)	1.691 (5.247)
<i>BI_{it}</i>	0.865*** (0.211)	3.347* (1.875)	-0.122 (3.267)
<i>ETR_{it} * BI_{it}</i>	-0.918* (0.489)	-3.322 (4.332)	0.094 (7.549)
<i>Size_{it}</i>	0.239*** (0.033)	2.103*** (0.296)	4.017*** (0.516)
<i>Lev_{it}</i>	-0.001*** (0.001)	-0.007*** (0.002)	0.014*** (0.003)
<i>BS_{it}</i>	0.089*** (0.015)	0.732*** (0.134)	0.112 (0.234)
R2	0.131	0.105	0.139
Root MSE	1.352	11.986	20.885
Statistics	27.310***	21.400***	29.360***

5 Conclusions and implications

Tax planning represents an essential economic choice that managers must make. While increased tax avoidance can align with the interests of shareholders, it can also raise managerial risks. Hence, managers are unlikely to pursue corporate tax avoidance except that provide them the personal benefits. Desai and Dharmapala, (2009) suggest that further research in emerging economies is essential to gain a deeper understanding of the consequences of corporate tax avoidance.

The objective of the present study is to examine the impact of corporate tax avoidance on firm performance. Applying the dynamic panel data method specifically employing the random and fixed effect model with a sample comprising 91 banking companies from Pakistan, India, Bangladesh and Sri Lanka from 2010 to 2021. The results depicts that there is mixed significant relationship between corporate tax avoidance and firm performance. These results are in accordance with the agency theory and suggest that management and policy makers should design policies accordingly.

Because of small scale of research studies for examining the ownership concentration as a moderator in the association between corporate tax avoidance and firm performance, this area deserves further research attention. Particularly, within the context of emerging economies, there is a notable lack of exploration into the role of ownership concentration in this relationship. To address these gaps in the literature, this research aims to investigate the influence of tax avoidance on firm performance, considering the moderating effect of ownership concentration. To achieve this objective, the study analyzes a dataset comprising 91 financial firms from the banking sectors of Pakistan, India, Bangladesh, and Sri Lanka over the period from 2010 to 2021.

Another significant outcome arising from our study indicates that relationship between corporate tax avoidance and firm performance is significantly positively moderated by the inception of ownership concentration. It confirms that, corporate tax avoidance activities appear to be advantageous for firms with concentrated ownership structures. This suggests the importance of establishing better control mechanisms to safeguard the interests of smaller group of shareholders in such organizations, as tax avoidance leads to increased after-tax cash, suggesting it can contribute value to these companies.

Furthermore, this discovery can provide valuable insights for policymakers and regulators, particularly in emerging markets like Pakistan, India, Bangladesh, and Sri Lanka, where concentrated ownership structures are prevalent. Regulators can delve into the efficiency of tax regulatory initiations in organizations with concentrated ownership, thereby promoting enhancements in the financial performance of these businesses.

It is intriguing to delve into the reasons why external independent directors may not exert a discernible influence on firm performance. This study observes that independent directors typically lack a supervisory role within the board. Additionally, the absence of legislative requirements for the qualifications and expertise of independent directors can result in a lack of competence in fulfilling their assigned responsibilities (Yasser et al., 2017). Many of these directors may not possess the necessary expertise to offer meaningful guidance, and they might also lack access to internal firm information (Maury, 2006; Nicholson & Kiel, 2007). Such information asymmetry can diminish the pivotal role of external directors in the firm. In some cases, they may struggle to fulfill their roles effectively due to a lack of support from insiders. Consequently, without a restructuring of the board and the establishment of clear qualifications and expertise requirements for board members, the concept of board independence may not yield significant benefits for firms.

5.1 Limitations and future recommendations

In conclusion, the outcomes of the present study have improved our understanding about the tax-

related choices made by managers and also shedding light on how ownership concentration might affect the tax decisions and firm performance. Nonetheless, it's essential to acknowledge that this study comes with certain limitations. Firstly, our research concentrates exclusively on banking sector of Pakistan, India, Bangladesh and Sri Lanka. Consequently, it's important to recognize that our findings may not be applicable to non-financial sector in different regions due to difference in working pattern of both financial institutions and non-financial institutions.

In conclusion, this study offers valuable insights for future studies suggestions. We propose that future studies should concentrate on particular industries, for instance the non-financial or production industries, or explore previously unexamined variables, such as corporate governance, earning management, tax aggression, and firm features. Furthermore, we recommend considering qualitative research approaches, for instance case studies or organizing expert interviews, as they can provide a more in-depth exploration of the subject matter by directly engaging with professionals who apply these concepts.

While there is a unanimous consensus on the importance of an independent and diverse board structure participating in shaping a company's strategic direction (Maury, 2006), this study did not establish a clear role of board independence. The study's findings may appear unexpected and could be attributed to several factors. Firstly, the board's representation as independent directors might not truly reflect their independence; in some instances, this role might be filled merely for formal inclusion in the company's profile. Secondly, it's essential to recognize that the cost and benefits associated with various board structures can vary significantly among firms and industries (Larmou & Vafeas, 2010). Therefore, the assertion that 'independent directors lack expertise' remains a matter of speculation, and further research is warranted, possibly by expanding the sample size and examining the industry-specific implications (Zhou et al., 2018).

We further recommend exploring the moderating impact of various corporate governance attributes, such as female board member, CEO power, CEO with foreign experience, and CEO incentives, as potential promising areas for future research.

5.2 Conflict of interest statement

The authors have no conflict of interest to declare. All co-authors have seen and agreed with the content of manuscript and there is no financial interest to report. We clarify that the submission is original work.

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Appendix 1: Unit Root test

Variable Name	Fisher augmented Dickey-Fuller tests Test statistics (p-value)
ROA_{it}	517.885 (0.000)
ROE_{it}	417.798 (0.000)
EPS_{it}	428.758 (0.000)
ETR_{it}	450.496 (0.000)
OC_{it}	390.092 (0.000)
BI_{it}	286.022 (0.000)
$Size_{it}$	336.689 (0.000)
Lev_{it}	284.613 (0.000)
BS_{it}	482.058 (0.000)

Appendix 2: Multicollinearity Test

	VIF	1/VIF
Lev_{it}	1.378	0.726
$Size_{it}$	1.368	0.731
BS_{it}	1.280	0.782
ETR_{it}	1.032	0.969
BS_{it}	1.029	0.972
Mean VIF	1.260	.

Appendix 3: Normality and Heteroskedasticity Test

Jarque-Bera normality test	6709.000
Chi (2)	(0.000)
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	365.270
	(0.000)
Cameron & Trivedi's decomposition of IM-test for heteroskedasticity	108.790
(P-value)	(0.000)