

Impact of Corporate Tax Avoidance and Philanthropy on Investment Efficiency. Evidence from Pakistan.

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ABSTRACT

Purpose- The purpose of such a study is to investigate the impact of corporate tax avoidance and philanthropy on investment efficiency in Pakistani firms.

Study Design/Methodology/Approach - The study's population is comprised of companies listed on the Pakistan Stock Exchange. A sample of 88 companies that are listed on the Pakistan Stock Exchange was used in the study. This study covers a period comprising 11 years from 2011 to 2021 by using panel data analysis. In this study, secondary data was collected and analyzed through Ordinary Least Squares (OLS). The OLS estimator is most appropriate to analyze panel data.

Findings- The findings reveal a considerable link between corporate tax avoidance, corporate philanthropy, and investment efficiency. It implies that companies will have to make higher philanthropic and tax payments. According to the findings, investment efficiency encourages managers to use corporate tax avoidance as a tactic to combat tax avoidance practices. Practical Implications - We emphasize the special contribution that corporate philanthropy makes to increasing investment efficiency, as well as the managerial ramifications of this practice.

Originality/Novelty - The current study is the first to focus on links between corporate tax avoidance, corporate philanthropy, and investment efficiency in Pakistan. Corporate tax avoidance, investment efficiency, and corporate philanthropy all address the unique dynamics and problems of the country while offering significant value and fresh perspectives. Through bettering corporate practices, policies, and socioeconomic outcomes, this research may support Pakistan's economic growth and sustainable development.

Keywords: Corporate Tax Avoidance, Corporate Philanthropy, Investment efficiency

1 | INTRODUCTION

Tax avoidance is the most important subject in the modern finance literature, and it has sparked a lot of interest in political and intellectual disputes ([Huseynov & Klamm, 2012](#)). There is an important impact of tax avoidance on public revenues in developing countries ([Picur & Riahi-Belkaoui, 2006](#)). [Desai et al. \(2007\)](#) think that managers who operate in their self-interest complicate the organization's structure and engage in tax avoidance operations. By using these strategies, companies avoid taxes and how to increase after-tax income without breaking the law ([Lisowsky, 2010](#)).

Tax avoidance businesses are impacted by corporations ([Lazăr & Istrate, 2018](#)) and society ([Ansar Majeed & Yan, 2019](#)). [Desai et al. \(2007\)](#) suggest that managers who increase free cash flow through tax avoidance may publish fewer comprehensive financial statements to conceal their tax avoidance from authorities. According to [Desai and Dharmapala \(2009\)](#), only shareholders of organizations with sound corporate governance benefit from enhanced tax avoidance. Tax avoidance impacts businesses' reputations ([Graham et al., 2014](#)), future financial success, company values ([Chang et al., 2013](#)), stock valuations, and capital costs ([Cook et al., 2017](#)). A range of tax preparation techniques and strategies are available for reducing taxable income through tax avoidance ([Khan et al., 2021](#)).

The purpose of tax avoidance is not to avoid taxes, but to gain greater benefit through unethical practices ([Khan et al., 2021](#)). They utilize the company's resources for their gain in this way, which results in less-than-ideal investments. Strong tax officers, in their opinion, enhance management oversight and lessen misuse of the company's internal resources ([Bashirimanesh & Arefmanesh, 2023](#)). By reducing their taxes, firms may be better able to achieve their investment targets ([Armstrong et al., 2012](#); [Graham et al., 2014](#)). Corporate tax avoidance is affected by a variety of internal and external factors, including R&D, intangible assets, profitability, debt, and business size ([Duan et al., 2018](#)). It is therefore in the shareholders' interest for managers of the company to make wise investments so that they may enhance its worth and optimize shareholder wealth ([Asiri et al., 2020](#)).

The term "corporate philanthropy" has been used in previous studies in different ways. [Johnson \(1966\)](#) defined an organization's corporate contribution as the amount deducted from its income tax return as a deduction for charitable donations. [Mescon and Tilson \(1987\)](#) defined the earliest type of corporate social behavior as corporate contributions. [Carroll \(1991\)](#) defined corporate Philanthropy as those business endeavors that consider society's assumption companies make excellent corporate citizens. [Godfrey \(2005\)](#) defined corporate Philanthropy as voluntary and non-reciprocal, or where the recipient is not the original owner transfers unconditional cash or other assets to an entity, or settles or cancels its liabilities.

Corporate philanthropy would inspire insiders (e.g., administrators and wealthy stakeholders) to be less associated with mischievous activities, prompting fewer office issues and revenue clashes among directors and investors, though clashes between controlling investors and minority investors ([Chen et al., 2018](#)). Even though self-interested managers can utilize philanthropy to enhance their executives are less likely to engage in misconduct because if they did, it would damage their opportunities and reputation for professional advancement. ([Chen et al., 2018](#)).

In the late 1990s and early 2000s, academic scholars and business professionals highlighted the strategic use of corporate donations. Many corporate executives encourage their companies to participate and engage in charitable endeavors to strengthen client relationships and create a positive business image, which promotes long-term financial success ([Makki & Lodhi, 2008](#)). ([Firth et al., 2014](#)), resulting in more serious agency issues. As they look for fresh strategies to get a competitive advantage, corporations make gifts to charity groups or establish their foundations ([Porter, 2002](#)) and their many stakeholders expect them to do so ([Logsdon et al., 1990](#)).

The previous studies focused on the relationship between corporate tax avoidance and corporate diversification ([Khan et al., 2021](#)), economic policy uncertainty ([Athira & Ramesh, 2024](#)) financial statement

comparability ([Ansar Majeed & Yan, 2019](#)), and firm value ([Desai & Dharmapala, 2009](#)). Lots of prior studies examine the relationship between corporate tax avoidance and customers' full attention ([Huang et al., 2016](#)), how the board of directors is made up ([Lanis & Richardson, 2011](#)), corporate leadership ([Armstrong et al., 2015](#)), ties to politics ([Kim & Zhang, 2016](#)), debt repayment ([Platikanova, 2017](#)), financial reporting ([Frank et al., 2009](#)). In previous literature the relationship between corporate philanthropy and corporate financial performance with the moderating roles of stakeholder response and political access ([Wang & Qian, 2011](#)) and exploited to disguise corporate misconduct and distract public attention ([Tan & Tang, 2016](#)). However, there is no empirical evidence that demonstrates the effect of corporate tax avoidance and philanthropy on investment efficiency in Pakistan. Thus, this research topic of the impact of corporate tax avoidance and philanthropy on investment efficiency among Pakistani firms needs to be clarified in the organizations.

[Blaylock \(2016\)](#) does not discover a meaningful correlation and [Khurana and Moser \(2013\)](#) only uncover a strong correlation with overinvestment. In contrast, this study examines the relationship between corporate tax avoidance and effective investment. This study's findings show that investors concerned about investment efficiency should pay attention to a company's philanthropic initiatives. Other studies have been undertaken in the past to research the influence of corporate tax avoidance and philanthropy on investment efficiency in various nations, but none have been conducted in Pakistan. In Pakistan, firms suffer several issues, including underinvesting in positive net present value initiatives or overinvesting in projects with a negative net present value, both of which reduce efficiency. Managers, however, are representatives who manage businesses on behalf of their owners and may engage in moral hazard or adverse selection at the expense of fund providers due to the asymmetry of information shared between investors and managers. In this situation, the manager may be able to avoid paying taxes, which can then be utilized as a company's internal finance source for investing.

Companies that don't pay taxes may invest more than is recommended if the issue of asset substitution is also present. Furthermore, executives may use corporate philanthropy to advance their political ties while disregarding the interests of shareholders. It is also likely that corporate philanthropy reduces free cash flow, causing businesses to miss out on potential investment opportunities and reducing investment efficiency.

According to the Pakistan Centre for Philanthropy (PCP), corporations donated PKR 16.74 billion and individuals donated 240 billion in 2022 in Pakistan. As a result, to enhance the organization's reputation and strengthen its ties to important partners, both of which can lead to a growth in enterprise value ([Wang & Qian, 2011](#)). The firm's return on net worth is predicted to grow as a result of efficient resource allocation management. RQ1: Does corporate tax avoidance influence the investment efficiency of Pakistani firms? RQ2: Does corporate philanthropy influence the investment efficiency of Pakistani firms? The objective of the study is to analyze the impact of corporate tax avoidance, and corporate philanthropy on investment efficiency.

Theoretical studies on corporate tax avoidance and philanthropy have been extensively studied, benefiting researchers, stakeholders, management, and policymakers. Tax avoidance can lead businesses to invest in non-value-adding projects, potentially causing an agency problem ([Jensen, 1986](#)). In the absence of sufficient surveillance, self-serving managers would make decisions that benefit them by using their freedom of choice ([Shleifer & Vishny, 1997](#)). As an outcome, managers who are paid in cash may avoid increasing their

existing income by investing in lucrative yet risky enterprises. When companies use corporate philanthropy to improve their image and fortify ties with key stakeholders, their stock value increases ([Godfrey, 2005](#)).

This study investigates the impact of corporate tax avoidance and philanthropy on investment efficiency in Pakistani firms, highlighting their economic significance and contributing to the financial management literature. Our work differs from previous studies on this subject in a few ways. Corporate tax avoidance and corporate philanthropy were used in various studies in China ([Asiri et al., 2020](#); [Chen et al., 2018](#)). We employed both variables in the same research in Pakistan, which may not have been explored in the literature. Corporate tax avoidance and corporate philanthropy were used in various studies in China ([Asiri et al., 2020](#); [Chen et al., 2018](#)). We employed both variables in the same research in Pakistan, which may not have been explored in the literature. We show a positive link between tax avoidance and investment efficiency, whereas [Blaylock \(2016\)](#) finds no significant relationship and [Khurana et al. \(2018\)](#) find a significant correlation only for overinvestment. Furthermore, by defining overinvestment and underinvestment using the regression residuals of [Richardson \(2006\)](#) technique, our measure of investment efficiency differs from that used by [Khurana et al. \(2018\)](#) and, [Blaylock \(2016\)](#). While [Khurana et al. \(2018\)](#) examine the impact of managerial competence and corporate governance on the relationship between corporate tax evasion and investment efficiency, we study the mediating role of product market competitiveness, financial statement obscurity, and financial statement quality.

This paper is divided into five chapters. The first chapter covers the introduction, background, research purpose, questions, gaps, and significance of the study. The second chapter includes a literature review and a hypothesis. The third chapter provides an overview of the research methodology. The fourth and fifth chapters discuss the results using descriptive, correlation, and regression analysis and discuss practical implications.

2 | LITERATURE REVIEW

The previous literary works, meanings, and general effects related to corporate tax avoidance, corporate philanthropy, and investment efficiency were discussed in this chapter. In the end, we will develop the hypothesis for his research.

2.1 | Theoretical framework

The pecking order theory states that cash serves only as a bridge between retained earnings and investment requirements and that there is no ideal amount of cash. According to [Edwards et al. \(2016\)](#), tax planning may be used as an internal funding source to help financially troubled companies with tax savings access worthwhile investment opportunities. Businesses utilize tax avoidance to increase internal resources and lessen capital constraints. In developing countries like Pakistan, firms play a crucial role in the development of the economy ([Edwards et al., 2016](#)). Consequently, even if a company has enough in-house resources to cover its investment, it may be able to avoid paying taxes ([Asiri et al., 2020](#)). According to [Edwards et al. \(2016\)](#), to help financially struggling businesses access worthwhile investment initiatives, a possible internal source of funding is tax planning.

This viewpoint is frequently referred to as "shareholder theory." Stakeholder theory, in contrast to shareholder theory, asserts that "the amount to which a company is capable of managing its connections with critical groups, such as financiers and shareholders, but also consumers, employees, and even communities or

societies, determines its performance." ([Van Beurden & Gössling, 2008](#)). Regardless of the disagreement, businesses employ philanthropy to enhance their reputation and contribute to a stronger link between corporate philanthropy and investment efficiency.

2.2 | Investment Efficiency

According to the capital structure independence theory, the only consideration that enterprises analyze when making investment decisions in a fully functioning capital market is investment possibilities ([Modigliani & Miller, 1958](#)). A firm will invest in all initiatives until the investment's marginal benefit meets its marginal cost and has a positive net present value ([Hayashi, 1982](#)). Managers often hesitate to undertake profitable initiatives due to potential capital market issues and sensitivity, resulting in potential overinvestment or underinvestment in enterprises.

Firms invest until the marginal return matches the cost; then excess capital is returned to investors after obtaining finance for projects with a good net present value. Agency conflicts brought on by asymmetrical knowledge and free cash flow are two of the most significant frictions ([Zeng et al., 2019](#)). Asymmetry theory suggests that a discrepancy in information between shareholders and managers can impact corporate finance, leading to underinvestment due to a few unsuccessful investment projects ([Myers, 1984](#)). According to [Mansour \(2014\)](#), company managers with stronger knowledge asymmetry exhibit higher investment cash flow sensitivity due to increased information symmetry between managers and investors, resulting from investor trust.

The agency theory suggests that a potential conflict between shareholders and managers could lead to overinvestment due to greedy managers exploiting company resources ([Jensen, 1986](#)). Managers can issue additional stocks when their companies are overpriced due to their better understanding of the value, but investors risk overinvesting these proceeds ([Biddle et al., 2009](#)). Managers may decline to raise the cash, which ultimately results in underinvestment: on the other hand, if outside investors react logically and raise the cost of capital. According to [Jensen \(1986\)](#) theory, managers are driven to grow their businesses beyond what is considered optimal from a perquisite consumption perspective. To get the board to approve their investment plans, the managers are likely to give it to them with an upward bias. As per the theories discussed above, various existing channels can assist in reducing imperfect information and agency conflicts among diverse stakeholders. High-quality financial statements, for example, can help to remove information asymmetry and boost investment efficiency ([Biddle et al., 2009](#)).

2.3 | Corporate Tax Avoidance

[Desai et al. \(2007\)](#) suggest that managers who increase free cash flow through tax avoidance may publish fewer comprehensive financial statements to conceal their tax avoidance from authorities. According to [Desai and Dharmapala \(2009\)](#), only shareholders of organizations with sound corporate governance benefit from enhanced tax avoidance. Tax knowledge, and performance-based compensation [Lanis and Richardson \(2015\)](#) can decrease cash flow to authorities and increase shareholder value ([Khurana & Moser, 2013](#)). Tax avoidance is influenced by factors like management's risk tolerance [Taylor and Richardson \(2014\)](#), Tax avoidance involves a taxpayer reducing their tax liability by exploiting loopholes in tax regulations or legislation to pay less than required ([Widuri et al., 2020](#)). Pecking order theory states that cash does not have an optimal level and only

serves as a conduit between remaining funds and investment requirements. Compared to internal funding, external borrowing is more expensive when there is an information asymmetry.

Therefore, businesses are more likely to exhaust internal resources before turning to outside finance. ([Asiri et al., 2020](#)). [Mkadm and Ali \(2024\)](#) define tax avoidance as both deductible and permissible behaviors. Rather than upholding the law, tax evasion usually takes advantage of its shortcomings. Using tax avoidance, firms can eliminate capital rationing and increase internal resources. The incremental rewards from cash tax savings, as internally created funds, become increasingly significant with knowledge asymmetry as external funding becomes more expensive.

Investing in non-value-enhancing projects may cause organizations to generate cash flow from tax avoidance to dealing with the agency issue ([Jensen, 1986](#)). It has been proposed that cash-based managers could forego making advantageous but hazardous investment projects to increase their present income. ([Rajagopalan & Finkelstein, 1992](#)). It is also possible for underinvesting firms to avoid projects with a positive NPV because their management prefers a 'quiet life' ([Bertrand & Mullainathan, 2003](#)). The study by [Harvey et al. \(2004\)](#) highlights that companies with high available cash flows tend to overinvest. Among the alternatives to internal funding available to companies are cash or tax savings due to tax avoidance ([Mayberry, 2012](#)). Conflicts between agencies can be aggravated by tax avoidance ([Ding, 2019](#)). In financial planning, tax avoidance is a long-term, sustainable approach that involves only lawful actions ([Bashirmanesh & Arefmanesh, 2023](#)).

A tax avoidance strategy may also be morally hazardous because, even if the investments they make do not maximize shareholder value, tax reductions can boost agents' ability to maximize their interests ([Al-Hadi et al., 2017](#)). In connection with agency problems, tax savings due to tax avoidance can cause asset substitution. Tax-avoiding businesses can make investments that are not at appropriate levels, which causes issues ([Firmansyah & Triastie, 2020](#)). Therefore, managers who have saved money by avoiding taxes may engage in endeavors that have a negative net present value (NPV), which results in unfavorable overinvestment. ([Asiri et al., 2020](#)). A firm with tax avoidance savings may experience underinvestment when its managers opt not to make investments positive in terms of net present value (NPV) ([Biddle et al., 2009](#)). However, this rise uses up company resources, which might cause managers to put off making investments, even in projects with a profitable net present value ([Risdiawan et al., 2024](#)).

In recent years, tax avoidance has been demonstrated to improve investment efficiency ([Khurana et al., 2018](#)). The critical beneficial outcome of assessment tax avoidance on investment efficiency was likewise viewed by [Comprix et al. \(2016\)](#). In the interim, [Bailing and Rui \(2018\)](#) discovered a significant inverse relationship between charge tax avoidance and investment efficiency, namely that charge tax avoidance promotes investment efficiency, leading to a propensity for overinvestment, which demonstrates venture insufficiency. [Goldman \(2016\)](#) discovered that tax aggressiveness either has a considerable negative impact on investment efficiency or a significant beneficial impact on overinvestment. [Asiri et al. \(2020\)](#) show that cash tax savings from tax avoidance activities are positively correlated with investment inefficiency. Increasing tax savings by engaging in tax avoidance may encourage managers to make wise investments, according to numerous studies. As a result, we state the following as our hypothesis:

H1: *Corporate Tax avoidance has a significant impact on the investment efficiency of Pakistani firms.*

2.4 | Corporate Philanthropy

Many managers agree that corporate philanthropy may be advantageous and enhance an organization's reputation with customers ([Makki & Lodhi, 2008](#)). It is observed that when a company engages in charitable endeavors, both its clientele and employees exhibit more stability. According to [Saiia et al. \(2003\)](#), philanthropy is the perception that the company has from its customers, suppliers, investors, representatives, attendees at events, and controllers. Even though self-interested managers can utilize philanthropy to enhance their executives are less likely to engage in misconduct because if they did, it would damage their opportunities and reputation for professional advancement. ([Chen et al., 2018](#)). Companies can engage in corporate philanthropy to enhance the organization's reputation and strengthen its ties to important partners, both of which can lead to a growth in enterprise value ([Wang & Qian, 2011](#)).

The conventional view of businesses is that their exclusive goal is to maximize financial production to further the interests of their investors ([Bremner, 1988](#)). The phrase "corporate philanthropy" refers to monetary gifts or other financial commitments made by businesses to worthy social and cultural causes, including those that support minorities, the disabled, healthcare, education, the arts, and human expression. ([Godfrey, 2005](#)). Corporate philanthropy would inspire insiders (e.g., administrators and wealthy stakeholders) to be less associated with mischievous activities, prompting fewer office issues and revenue clashes among directors and investors, though clashes between controlling investors and minority investors ([Chen et al., 2018](#)). In the unlikely event that businesses are acting altruistically, even corporate philanthropy heightens the organization's generosity, which ultimately increases its advantages ([Bashir, 2017](#)). The organization's generosity ought to have an impact on its partners and provide the groundwork for future opportunities.

According to research, companies that engage in corporate giving are more exposed to political pressure and intensive public scrutiny. This contrasts sharply with developed economies such as the US and the UK, where companies mostly depend on free market competition to draw in outside capital and investment possibilities. Pakistani companies may engage in corporate philanthropy to build political connections and guanxi, which may help them obtain better projects or preferential treatment from the government. If this assertion is true, businesses that participate in corporate giving have a greater chance of impressing the government with their superior investment efficiency and winning lucrative contracts. It enables companies to contribute a percentage of their resources to finance social causes as a business strategy. Through corporate giving in the company's primary business sector, corporate philanthropy aims to achieve success in the areas of economics, society, the environment, and human rights ([Affiah & Aniefiok, 2024](#)). Businesses may employ these kinds of initiatives to enhance both the standard of the business environment they operate in and their competitive position ([Affiah & Aniefiok, 2024](#)).

[Chen et al. \(2018\)](#) indicated that companies that prioritize social responsibility and exhibit increased transparency in their financial reporting and commercial operations have a lower probability of experiencing agency issues. Due to enhanced external supervision, less information asymmetry, and corporate philanthropy, all of which raise investment efficiency ([Chen et al., 2018](#)). Because formal systems like the legal system, market mechanisms, and corporate governance are not perfect, there may be more immoral or reckless behavior in developing countries, which are in the emerging and transitional stage of development ([Sun et al., 2023](#)). Additionally, businesses may be more inclined to use charitable donations as a means of risk (image)

management. Additionally, corporate charity may be employed to hide corporate wrongdoings, such as environmental and safety violations ([Du, 2015](#)). Consequently, charitable endeavors may take on the characteristics of "insurance," protecting a company's reputation and its principal investors ([Godfrey, 2005](#)). Consequently, charitable endeavors can decrease unfavorable stakeholder responses and public opinion.

H2: *Corporate philanthropy has a significant impact on the investment efficiency of Pakistani firms.*

3 | METHODOLOGY & DESIGN

3.1 | Population & Sample

Firms in the study are listed on the Pakistan Stock Exchange. We first selected 200 companies for data after obtaining the data from different firms; as a result, we chose 88 companies for regression. A sample of 88 companies that are listed on the Pakistan Stock Exchange was used in this study. This study covers a period comprising 11 years from 2011 to 2021. The data was collected from multiple sources of secondary data, which include annual reports, firms' websites, and open-door websites.

3.2 | Variables Measurement and Explanation

Measurement of dependent, independent, and control variables is shown below.

3.2.1 | Investment Efficiency

In this research paper: the dependent variable is investment efficiency. It is calculated using the model's output, which is the difference between the expected and actual investment levels ([Chen et al., 2017](#)). As a result, most academics agree that regression residuals are a good way to assess investment efficiency. The difference between the actual and expected number of employees "expressed by residuals" signifies low labor investment efficiency ([Mo & Lee, 2019](#)). Similarly, [Oh and Kim \(2018\)](#) constructed investment inefficiency using the residual measurement method. Most researchers utilize Tobin's Q value or the previous year's sales growth rate as the only gauge of a company's growth opportunity in prior studies ([Chen et al., 2017](#)); [Biddle et al. \(2009\)](#). In this research, we follow the model used by [Biddle et al. \(2009\)](#), which involves developing a firm-specific investment model that depends on growth possibilities (as measured by sales growth) and employing the firm-specific proxy for investment variance provided by residuals.

$$Investment_{i,t} = \beta_0 + \beta_1 Sale\ Growth_{i,t-1} + \varepsilon_{i,t}$$

Where:

Positive residuals indicate that there are deviations from projected investments that are good, indicating the firm selected negative NPV projects. Negative calculated residues indicate a deviation from expected investment, suggesting that the firm under-invested.

3.2.2 | Corporate Tax Avoidance

Tax obligations and book-tax discrepancies estimated from financial reports are the most commonly utilized proxies for tax avoidance ([Hanlon & Heitzman, 2010](#)). We know a variety of proxies to calculate corporate tax avoidance, they are frequently utilized in the literature that came before ([Bauer, 2016](#); [Blaylock,](#)

2016). We utilize the accounting effective tax rate (ETR), which is calculated as follows, as a key proxy for tax avoidance:

$$TA_{RATE} = \text{statutory tax rate} - \text{real tax rate}$$

Where:

$$\text{Real Tax Rate ETR} = \frac{\text{income tax expense}}{\text{income before tax}}$$

A lower real tax rate means more tax avoidance. However, there are major statistics in Pakistani listed companies' statutory tax rates, which have a big impact on their tax expenses. As a result, it's crucial to keep an eye on the impact of statutory tax rates on businesses.

3.2.3 | Corporate Philanthropy

The quantity of a company's charitable contributions during a given year was measured (Chen et al., 2018). It is a dummy variable that is programmed with 1 if a company's total charitable contributions for a given fiscal year are greater than zero and 0 otherwise. To complete this study, only donations designated as such, whether in kind or cash, are regarded as corporate philanthropy, based on previous studies and the limits of data availability. The natural log of donation was used to measure corporate philanthropy (Adams & Hardwick, 1998). We use dummy variables to measure philanthropy (Chen et al., 2018). The information was derived from companies listed on the Pakistan Stock Exchange's audited annual reports. As mandated by section III, E-1 of schedule 4 of the Firms Ordinance 1984, the Securities and Exchange Commission of Pakistan mandates that all listed corporations disclose corporate gifts in their profit and loss reports.

3.2.4 | Dividend Payout

Non-dividend-paying corporations compared to corporations that pay dividends, are larger, more successful, and less leveraged. The average difference between dividend payers and non-dividend payers is notably different at the 1% level (Kowalewski et al., 2007). If the corporation paid a dividend, the value of this indicator variable is one; otherwise, it is zero.

3.2.5 | Cash Holding

As a control variable, the cash holding variable was used in this study. Kowalewski et al. (2007), Biddle et al. (2009), Chen et al. (2013), Zhang et al. (2019) measured cash holding in the literature. We use Kowalewski et al. (2007) definition of cash holding to determine our cash holding, we use the ratio of cash and short-term investments to assets.

3.2.6 | Firm Age

Our control variable is firm age. According to Shumway (2001), the most economically significant indicator of a company's age is the number of years since it first went public. That incident marks a significant turning point in a company's history. Listing, as expected, has an impact on ownership and capital structure, increases the potential for expansion, increases media exposure, and necessitates new corporate governance frameworks (Loderer & Waelchli, 2011). According to Shumway (2001), firm age is defined as The term "AGE" which stands for "firm age," which is determined by taking the natural logarithm of the time since the firm was founded and the current year.

3.3 | Econometric Model

The Ordinary Least Square (OLS) was used in this investigation. To study fixed period panel data, the Ordinary Least Square (OLS) estimator is the best choice. Ordinary Least Square, on the other hand, has been used in the majority of recent research work in the dynamic panel data estimator. It is best for dependent variables and independent variables that are either present or past realizations of the error term. To test hypotheses H1 and H2, the following regression equation was computed, which is based on prior studies that have also used a pre-model.

$$INVEFF_{i,t} = \alpha_0 + \beta_1 TA_{Rate_{i,t}} + \beta_2 PHIL_D_{i,t} + \beta_4 DIV_{i,t} + \beta_5 CASH_{i,t} + \beta_6 AGE_{i,t} + \varepsilon_{i,t} \quad \text{Eq 1}$$

$$INVEFF_{i,t} = \alpha_0 + \beta_1 TA_{Rate_{i,t}} + \beta_4 DIV_{i,t} + \beta_5 CASH_{i,t} + \beta_6 AGE_{i,t} + \varepsilon_{i,t} \quad \text{Eq 2}$$

$$INVEFF_{i,t} = \alpha_0 + \beta_2 PHIL_D_{i,t} + \beta_4 DIV_{i,t} + \beta_5 CASH_{i,t} + \beta_6 AGE_{i,t} + \varepsilon_{i,t} \quad \text{Eq 3}$$

Whereas:

INVEFF = Investment efficiency

TA_{Rate} = Tax avoidance

PHIL_D = Corporate philanthropy

DIV = Dividend payout

CASH = Cash holding

AGE = Firm age

4 | RESULTS and ANALYSIS

This section of the study examines the results in the form of descriptive analysis, correlation analysis, and regression analysis and how investment efficiency affects corporate tax avoidance and philanthropy.

4.1 | Descriptive Analysis

The descriptive analysis depicts the key features of the data in the study and includes assessments of central tendency and variation, which signifies "spread." The variables' mean, median, mode, standard deviation, minimum, and maximum are all calculated.

Table 1

Descriptive Statistics

	Obs	Mean	Median	Maximum	Minimum	Std. Dev.
INVEF	968	0.0062	-0.0039	0.5445	-2.1792	0.2162
TA	968	-0.0556	0.0609	0.3499	-29.9713	1.4104
PHIL_D	968	0.9059	1	1	0	0.2919
DIV	968	0.8274	1	1	0	0.3780
CASH	968	0.0693	0.0200	0.5800	0	0.106
AGE	968	1.5931	1.5965	1.8512	1.1139	0.1630

Table 1 presents the results of the descriptive statistics: all indicators are assessed using the descriptive statistics test in EVIEWS a result of descriptive statistics. The total number of observations was 968. The investment efficiency mean value is 0.0062, while the standard deviation of 0.2162, which measures how far

the data deviates from the mean, is 21.62%. The minimum value of investment efficiency is -2.1792 and the maximum value is 0.5445. The standard deviation of corporate tax avoidance is 1.4104, and the mean value of corporate tax avoidance is -0.0556 which shows a 141.04% variation from the mean value of corporate tax avoidance. The minimum value of corporate tax avoidance is -29.9713 and the maximum value is 0.3499. The corporate philanthropy score is 0.9059, with a standard deviation of 0.2919, according to descriptive statistics. Results of corporate philanthropy show a 29.19% deviation in the data. The minimum value of corporate philanthropy is 0 and the maximum value is 1. The mean value dividend payout is 0.8274, with a standard deviation of 0.3780. Variation in the data of dividend payout is 37.80%. The minimum value of dividend payout is 0 and the maximum value is 1. The mean value of cash holding is 0.0693, while the standard deviation is 0.1060, which reflects a variation, is 10.60%. The minimum value of cash holding is 0 and the maximum value is 0.5800. The mean value of age is 1.5931, with a standard deviation of 0.1630 which shows the variation of data is 16.30%. The minimum value of cash holding is 0 and the maximum value is 0.5800. In this table, there are a total of 5 indications.

4.2 | Correlation Analysis

The relationship between the study's variables is investigated using correlation analysis. The correlation coefficient's value should fall between +1 and -1.

Table 2

Correlation

	INVEFF	TA	PHIL_D	DIV	CASH	AGE
INVEFF	1.0000	-	-	-	-	-
TA	0.0518	1.0000	-	-	-	-
PHIL_D	0.0541	0.0689*	1.0000	-	-	-
DIV	-0.27827**	0.0362	0.2182**	1.0000	-	-
CASH	-0.2813**	0.0317	-0.0252	0.2068**	1.0000	-
AGE	-0.0117	0.0451	0.0993**	0.1372**	0.0492	1.0000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 shows the association among the variables. The value of tax avoidance and investment efficiency is 0.0518. this value shows the direct relationship between corporate tax avoidance and investment efficiency. The correlation between investment efficiency and corporate philanthropy is positive with a value of 0.0541. It means that businesses will have to pay more in taxes and donations. Investment efficiency has a negative association with dividend payout with a value of -0.27827 which indicates a weak relation between investment efficiency and dividend payout. At the 0.01 level, the dividend payout has a significant relationship with investment efficiency. The correlation between investment efficiency to cash holding is -0.2813, which indicates a weak relation between investment efficiency and cash holding. The correlation between investment efficiency and firm age is -0.0117, which shows a weak relationship between the two.

4.3 | Regression Analysis

We test three different regression models for tax avoidance, philanthropy, and investment efficiency to investigate the impact of corporate tax avoidance and philanthropy on investment efficiency. Additionally, the

F-statistics number provides the model's goodness of fit and is significant in demonstrating how well-defined the model is. In addition, the constant term of this model, which states that the model needs to include more descriptive variables, is crucial. However, the analysis discovered that corporate tax avoidance, philanthropy, and investment efficiency had both direct and indirect effects using various proxies. As a result, the study discovered a direct significant/positive or negative role for corporate tax avoidance, philanthropy, and investment efficiency in various Pakistani enterprises. Because this study is based on panel data, the random effect model is used in this study.

4.4 | Hausman Test

The random-effect model and the fixed-effect model are compared using this test. The random effect model is used if the p-value is insignificant or more than the range of 0.05.

Table 3

Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Period random	2.378232	5	0.7947

Table 3 shows the result of the Hausman test for the equation 1. In the end, the Housman test ratio (Chi-Sq. = 1.0000) suggests that the null hypothesis is accepted, concluding that the random effect model is preferable to the fixed effect model.

Table 4

Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Period random	0.000000	4	1.0000

Table 4 shows the result of the Hausman test for the equation 2. In the end, the Housman test ratio (Chi-Sq. = 1.0000) suggests that the null hypothesis is accepted, concluding that the random effect model is preferable to the fixed effect model.

Table 5

Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Period random	0.000000	4	1.0000

Table 5 shows the result of the Hausman test for the equation 2. In the end, the Housman test ratio (Chi-Sq. = 1.0000) suggests that the null hypothesis is accepted, concluding that the random effect model is preferable to the fixed effect model.

4.4 | Random Effect Model

To examine the random influence of corporate tax avoidance and philanthropy on investment efficiency, a Random Effect Model is applied under the guidelines of the Hausman Test. Table 6 shows how corporate tax avoidance (TA), dividend payout (DIV), cash holding (CASH), and firm age (AGE) impact on investment efficiency.

Table 6

Regression Analysis

	Coefficient	Std. Error	t-Statistic	Prob.
C	0.082836	0.064098	1.292335	0.1966
TA	0.010322	0.004622	2.233165	0.0258
DIV	-0.131688	0.017877	-7.366513	0.0000
CASH	-0.484395	0.062533	-7.746250	0.0000
AGE	0.037854	0.040247	0.940523	0.3472
R^2	0.140754	<i>Adjusted R²</i>	0.128131	
F-statistic	11.15085	<i>Prob(F-statistic)</i>	0.000000	

The value of R Square as given in the below table is 0.140754 in the case of model 1 explaining that 14.0754% impact on investment efficiency. To test the hypothesis, we used linear regression analysis. The regression results are shown in Table 3. It reveals that corporate tax avoidance has a positive influence on investment efficiency (coefficient = 0.010322 $p < .05$). The results show, that if tax avoidance is increased by 1 unit, then investment efficiency will increase by 1 unit keeping other factors remaining constant. Hypothesis 1 is statistically significant (corporate tax avoidance has a significant impact on investment efficiency). According to prior research, tax avoidance has a favorable impact on the relationship between corporate tax avoidance and investment inefficiency ([Asiri et al., 2020](#)). The control variable dividend payout has a significant negative impact on investment efficiency with a coefficient value is -0.131688 and a value less the .05. Cash holding has a significant negative impact on investment efficiency (coefficient -0.484395, $p < .05$). Firm age has an insignificant beneficial impact on investment efficiency coefficient = 0.037854 $p > .05$ as a control variable.

Table 7

Regression Analysis

	Coefficient	Std. Error	t-Statistic	Prob.
C	0.033573	0.065163	0.515214	0.6065
PHIL_D	0.073756	0.023028	3.202948	0.0014
DIV	-0.144064	0.018306	-7.869733	0.0000
CASH	-0.466288	0.062517	-7.458563	0.0000
AGE	0.032111	0.040211	0.798565	0.4247
R^2	0.145457	<i>Adjusted R²</i>	0.132903	
F-statistic	11.58681	<i>Prob (F-Statistic)</i>	0.000000	

Table 7 shows how corporate philanthropy (PHIL_D), dividend payout (DIV), cash holding (CASH), and firm age (AGE) impact on investment efficiency. The value of R-Square as given below table is 0.145457 in the case of the model explaining that 14.54457% impact on investment efficiency. To test the hypothesis, we used linear regression analysis. The regression results are shown in Table 7. Hypothesis 2 (corporate philanthropy has a significant impact on investment efficiency) that their findings have a statistically significant positive impact on investment efficiency (coefficient = 0.073756 $p < .05$). The second hypothesis of this study is that corporate philanthropy has a significant positive impact on investment efficiency, which was supported by regression analysis in the previous study ([Chen et al., 2018](#)). According to the results, if corporate philanthropy is increased by 1 unit, then investment efficiency will increase by 7 units keeping other factors remaining constant. The results demonstrate that the philanthropy coefficient (PHIL_D) is positive and significant, implying that philanthropy donations improve investment efficiency significantly. The control variables dividend payout has a significant negative impact on investment efficiency with a coefficient value is -0.144064 and P-value $< .05$. Cash holding has a significant negative impact on investment efficiency (coefficient -0.466288, and $p < .05$). Firm age has an insignificant beneficial impact on investment efficiency coefficient = 0.032111 $p > .05$ as a control variable.

Table 8

Regression Analysis

	Coefficient	Std. Error	t-Statistic	Prob.
C	0.041974	0.065183	0.643940	0.5198
TA	0.009452	0.004610	2.050217	0.0406
PHIL_D	0.070861	0.023032	3.076593	0.0022
DIV	-0.144475	0.018277	-7.904926	0.0000
CASH	-0.469839	0.062436	-7.525081	0.0000
AGE	0.029182	0.040169	0.726483	0.4677
R^2	0.149213	<i>Adjusted R²</i>	0.0135808	
F-statistic	11.13093	Prob (F-Statistic)	0.000000	

Table 8 shows how corporate tax avoidance (TA), corporate philanthropy (PHIL_D), dividend payout (DIV), cash holding (CASH), and firm age (AGE) impact on investment efficiency. To test the hypothesis, we used linear regression analysis. The regression results are shown in table 4.8. It reveals that corporate tax avoidance has a positive influence on investment efficiency (coefficient = 0.009452 $p < .05$) which means an increase in corporate tax avoidance was an increase in investment efficiency. Hypothesis 1 is statistically significant (corporate tax avoidance has a significant impact on investment efficiency). According to previous research, tax avoidance has a favorable impact on the relationship between corporate tax avoidance and investment inefficiency ([Asiri et al., 2020](#)). Hypothesis 2 (corporate philanthropy has a significant positive impact on investment efficiency) that their findings have a statistically significant positive impact on investment efficiency (coefficient = 0.070861 $p < .05$). According to the results if corporate philanthropy is increased by 1 unit, then investment efficiency will increase by 7 units keeping other factors remaining constant. The second hypothesis of this study is that corporate philanthropy has a significant positive impact

on investment efficiency, which was supported by regression analysis in the previous study ([Chen et al., 2018](#)). The results demonstrate that the philanthropy coefficient (PHIL_D) is positive and significant, implying that philanthropy donations improve investment efficiency significantly. The control variable dividend payout has a significant negative impact on investment efficiency value of coefficient -0.144475 and $p < .05$. In a previous study dividend payout significant impact on investment efficiency which is supported in this paper ([Asiri et al., 2020](#); [Chen et al., 2018](#)). Cash holding has a significant negative impact on investment efficiency (coefficient -0.469839, respectively, $p < .05$). In a previous study cash holding significantly impacted investment efficiency which is supported in this paper ([Asiri et al., 2020](#); [Chen et al., 2018](#)). Firm age has an insignificant beneficial impact on investment efficiency coefficient = 0.029182 $p > .05$ as a control variable. In this paper firm age has an insignificant impact on investment efficiency which was not supported in previous studies ([Asiri et al., 2020](#); [Chen et al., 2018](#))

5 | CONCLUSION

The study analyzed the impact of corporate tax avoidance and philanthropy on investment efficiency using panel data from 88 Pakistani firms from 2011-2021, using descriptive, correlation, and regression analyses. Regression analysis shows how corporate tax avoidance, corporate philanthropy, dividend payout, cash holding, and firm age impact investment efficiency. The study reveals a significant positive correlation between corporate tax avoidance and investment efficiency and also indicates that corporate philanthropy also positively impacts investment efficiency. Regression analysis results support the hypothesis of this study. The dividend payout has a significant impact on investment efficiency. Cash holding has a significant impact on investment efficiency. Results show the insignificant impact of firm age on investment efficiency.

We contribute to the literature by looking at how corporate tax avoidance and philanthropy are used to effectively invest in Pakistani enterprises. Tax avoidance supports firms in reducing their tax burden. According to previous research, tax avoidance has a favorable impact on the relationship between corporate tax avoidance and investment inefficiency ([Asiri et al., 2020](#)). We show that there is a positive relationship between corporate tax avoidance and philanthropy activities and investment efficiency using several measures of tax avoidance and investment efficiency. Corporate tax avoidance and philanthropy are favorably associated with investment efficiency, confirming our assumption. Our findings support the premise that corporate philanthropy can be used to improve a company's brand and image, resulting in increased investment efficiency.

This study supports the argument that corporate philanthropy managers effectively reduce unproductive investments, improving investment efficiency. In previous study showed that corporate philanthropy has a significant positive impact on investment efficiency, which was supported by regression analysis in the previous study ([Chen et al., 2018](#)). It contributes to the growing knowledge about corporate philanthropy and its implications for executives and investors. The research also discovers a new component strongly linked to investment efficiency. Tax avoidance encourages managers to demonstrate investment efficiency benefits, attracting shareholders, investors, and stakeholders. It encourages managers to invest in projects with positive net present value, combating tax avoidance practices. Corporate donations can be relevant for fundraising campaigns in charity institutions.

This study, covering 11 years from 2011 to 2021, only examines 88 Pakistan stock exchange firms, overlooking companies that exited due to mergers or acquisitions. The study used 88 firms as a sample, suggesting future research could expand to include other nations. It recommends further research on the economic implications of employment, capital growth, and capital flows, revealing moderators like corporate governance traits and social responsibility.

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