

## Article

# Committee Diversity Effect on Corporate Investment Risk Practices

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## Abstract

**Background:** This study examines how diversifying committees influence corporate investment risk practices, specifically in decision-making and resource allocation strategies. Previously, board diversity was commonly used in studies, but committee diversity was often overlooked, even though committees are delegated with providing recommendations for board decisions. **Methods:** Using information on committee presence, size, gender representation, and independent and non-executive members, we build a detailed diversity composite index. We capture this information from various sources such as corporate official disclosures, corporate websites, and other relevant disclosures. We combine this data with financial and investment information collected through secondary data, including Bloomberg and Refinitiv databases about companies listed on the ASX 300 in the Australian equity market from 2018 to 2020. **Results:** Our findings show that diversity plays a much more critical role in enhancing long-term strategic investment decisions than in driving short-term operational gains. **Conclusions:** Additional investigations have shown that increased diversity enhances corporate resource allocation, generating optimal investment and investment efficiency levels. These findings highlight the strategic importance of diversity as a contributor to good governance and better financial performance.



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**Keywords:** committees; diversity; corporate investment decisions; risk practices; operational efficiencies

## 1. Introduction

The movement towards corporate board diversity to create more inclusive and effective decision-making mechanisms is increasingly shaping the debates in corporate governance (Rao & Tilt, 2016). Cross-disciplinary accounting research combines different fields of study to better understand the main components (Dellaportas et al., 2022). Although many studies have investigated how gender diversity on corporate boards impacts financial performance, the results are mixed and often inconclusive (Gordini & Rancati, 2017). These inconsistencies support the need for further studies to identify the possible causes of the mixed results. One important gap in the research is the lack of focus on the overall impact of diversity within committees compared to board diversity. This focus brings an innovative approach to identifying the diversity source of decision-making recommendations of committees and analyzing the impacts of committee diversity on board decision outcomes.

Committees develop and present crucial strategic recommendations to the board. Past research findings have emphasized the importance of moving research beyond mere numerical diversity representation so that a more comprehensive understanding of how committee diversity influences corporate operations, both within the governance mechanism and firms' profitability (Green & Homroy, 2018). Building on this idea, Singhanian et al. (2024) found that diversity within remuneration and nomination committees can boost financial performance, showing the significant impact of these sub-groups on corporate decisions. However, their study was limited to only these two key strategic committees, aligning with the limited prior research on the diversity of those committees.

We use three theoretical frameworks as we progress through this study. Two theories, agency theory and stakeholder theory (both the ethical and managerial branches), assist in defending the mandatory formation of boards and a number of committees. Agency theory supports the mandatory existence of committees and their diversity in managing agency conflicts and the delegation of corporate decision-making recommendations to protect the shareholder group of stakeholders. In Australia, these protections to mitigate this conflict have become law. For example, the Corporations Act (Commonwealth of Australia, 2001) and its addendum CLERP 9 Commonwealth of Australia (2004) (similar to SOX in the US) provide requirements for various mandatory committees as well as specific directors' qualifications and experiences to be members of these committees. These qualifications and experiences have been included in prior Australian-based studies (e.g., Azizkhani et al., 2013).

The ethical branch of stakeholder theory uses a normative approach, while the managerial branch of stakeholder theory uses an instrumental approach to identify why voluntary committees exist (Freeman et al., 2012) as well as in a necessary and complementary manner (Valentinov & Hajdu, 2021). Voluntary committees frequently reflect a mix of these two branches, with emphasis placed on the breadth of stakeholder interests represented and considered by the diverse committee memberships (Smaguca, 2022). Bridoux and Stoelhorst (2022) concluded, implicitly, that using both branches of stakeholder theory should be the aim in the understanding of voluntary committees and the development of the economic and moral nature of organizational relationships to manage value creation knowledge.

Finally, social role theory advances the argument that individuals' behaviors and traits are influenced by societal expectations from the social roles that individuals undertake (Eagly & Wood, 2012). This theory supports an explanation about how members from different demographic backgrounds bring distinct perspectives, shaped by their societal roles, into group deliberations. These perspectives potentially affect group dynamics and recommendation decision-making (Koenig & Eagly, 2014), which is demonstrated in the committee diversity in the current study. The inclusion of individuals' behaviors and traits should enlighten the broader scope of diversified committees. Consequently, including this theory as part of the committee diversity components, adds to the motivation and the innovative approach of this study.

Our study, therefore, investigates how diverse viewpoints within these committees help businesses not only in the mandatory monitoring and direction of management teams in aligning the interests of shareholders and executives (Adams & Ferreira, 2009; Jensen & Meckling, 1976) but also the voluntary equitable management of each stakeholder group's needs (Deegan, 2014). Social role theory supports more communal, public-oriented qualities, such as being supportive and empathetic foci of diversity committees in their recommendations (Eagly, 1987; Ali et al., 2014; Manita et al., 2018). These diverse committees' recommendations in the boardroom facilitate better decision-making and recommend required mechanisms for corporations to navigate complex investment opportunities (Hill-

man et al., 2000). More recently, the relationship between board gender diversity and investment inefficiency has been studied (Baik et al., 2024; Farooq et al., 2023).

Substantial research has been undertaken on the impact of board diversity on various aspects of organizational performance, including investment efficiency. However, the precise influence of diversity within committees on investment efficiency has not been extensively studied. Our study seeks to fill this gap by examining how diverse compositions within committees affect corporate investment risk practices, decision-making, and investment efficiency (McNichols & Stubben, 2008).<sup>1</sup> We aim to determine whether diverse perspectives within these committees result in more effective investment outcomes.

Our research focuses on corporate investment risk practices and decision-making, which are crucial to a firm's financial health (Gomariz & Ballesta, 2014). Various measures of corporate investment risk practices and outcomes are used to explore how diversity across committees might influence strategic investment choices, including how well these choices align with optimal investment levels (McNichols & Stubben, 2008). By investigating the strategic impact of overall committees' diversity, our study enhances the understanding of how it can either bolster or hinder effective investment decision-making. Through this focus, we aim to contribute to understanding not only the importance of committee diversity in shaping strategic corporate governance but also the factors contributing to optimizing financial performance.

We collected data on variables affecting our diversity measure, specifically from strategic committees such as sustainability, audit, nomination, executive board, risk, and remuneration, of firms listed on the ASX 300 from 2018 to 2020. This period was selected because it represents a pre-quota implementation of the ASX 2019 corporate governance recommendation 1.5, which was only effective for the top 300 ASX companies from the first full financial report year after 1 January 2020. The consultation document for these proposed changes was published and circulated in 2018. Therefore, reporting years prior to the known impending ASX recommendations should be most relevant to forward planning of companies to meet the recommendations for 2021 annual reports. Hence, the choice of the period 2018 to 2020 is appropriate. Our assessment focused on several aspects of diversity, including the existence of these committees, their size, gender representation, and the proportions of independent and non-executive members.

Our findings reveal that greater diversity within committees significantly enhances the quality of corporate investment decision-making, particularly in long-term strategic areas. The findings indicate that while the benefits of committees' diversity are apparent across various investment metrics, they are most substantial in decisions that shape strategic, long-term investments rather than those focused on short-term operational efficiencies. Additionally, our extended analysis shows how different viewpoints contribute to improving investment decision-making and enhancing resource allocation and investment efficiency. This analysis highlights the important role of committee diversity in improving board-level governance and enhancing financial outcomes, providing valuable insights for establishing a robust corporate governance structure. Our findings remain consistent after performing different tests, such as using different measures of corporate investment risk practices and endogeneity tests. We are not claiming that we fully address potential endogeneity issues but by performing an instrumental variable (IV) method, we address this important concern while acknowledging that removing it can be challenging.

These findings advance the understanding of corporate governance and its influence on corporate investment risk practices. They also provide evidence that the diversity of committees improves both decision-making quality and financial return through their influence on the choice of strategic investment opportunities. This study highlights the influence of committee diversity on long-term strategic decisions versus short-term operational

efficiencies, which is an important viewpoint on how committee diversity can be leveraged within corporate governance. Furthermore, our findings provide practical insights into organizations, suggesting that incorporating diverse viewpoints within committees can lead to improved strategic decision-making, particularly in corporate investment strategies.

This article proceeds by providing a literature review, theoretical background, and development of hypotheses. It then continues with research design, empirical findings, and robustness analysis. The conclusion presents the discussion and implications of the findings.

## 2. Review of Literature and Development of Hypotheses

Agency theory provides a useful framework for investigating how diversity within corporate committees influences investment risk practices (Jensen & Meckling, 1976). According to agency theory, one of the primary roles of corporate boards is to oversee management, a task that can be strengthened by greater diversity among board members (Ararat et al., 2015). While directors serve on various committees, the composition of these committees varies, suggesting that diversity at the board level might naturally extend to the committee level. However, each committee's diversity level may differ based on its specific characteristics and requirements.

Research has identified several factors that shape the diversity of committees, noting that a significant amount of decision-making occurs at the committee level (Ellstrand et al., 1999, p. 67). Adams et al. (2018) emphasize that directors are multifaceted and argue that regulatory disclosures should include specific characteristics such as experience, qualifications, attributes, and skills as part of board diversity. Klein (1998) found that committee experience is positively linked to higher stock returns and investment performance. Diversity is often associated with experienced, skilled, non-executive (outside) directors who bring greater independence to decision-making, leading to more informed choices (Sarkar & Selarka, 2021). It also reduces the risk of decisions being dominated by a few board members, adding a broader range of skills, leadership styles, values, and networks. Additionally, higher diversity can reduce a company's reliance on external conditions and improve its resilience and adaptability (Nicolò et al., 2022). The size of committees is also an important characteristic to consider when assessing diversity (Altin, 2024). Gender diversity has similarly been recognized as a key component of committee diversity (Khan et al., 2020). The existence of specific committees, some of which are voluntary while others are mandated by the ASX recommendations or the Corporations Act (Commonwealth of Australia, 2001) in Australia, also plays a role in determining the impact of committee diversity. This study includes other committees acknowledging that their presence or absence affects the overall diversity and, consequently, the impact on corporate outcomes. From the agency theory perspective, this study hypothesizes that diversity within committees enhances corporate investment decisions and performance outcomes. As some committees are mandatory and others voluntary, the existence of the committee would seem to be an essential component to any composite metric.

### 2.1. Diversity in Committees and Corporate Performance

Committees are crucial in corporate governance, monitoring, and consulting tasks (Bugeja et al., 2016). They provide several benefits, including decentralized strategic decision-making, efficient role distributions, expertise, improved board accountability, and reduced agency conflicts through proper supervision, leadership separation, and monitoring responsibilities (Berezinets et al., 2017). The diversity within nomination committees enhances discussions, as members are more likely to select capable directors who can significantly contribute to the company's economic success (Kahane et al.,

2013). The following sub-sections will describe various characteristics of board committee diversity—such as size, experience of independent directors, the influence of non-executive directors' independence, and gender diversity—and explore their impact on corporate performance, particularly in terms of investment and financial outcomes.

## 2.2. Committee Size, Diversity and Corporate Performance

Research has shown conflicting findings regarding the relationship between audit committee size and firm performance. Altin (2024) conducted a meta-analysis of 39 previous studies and found a significant positive relationship between audit committee size and firm performance in both developed and developing countries. Smaller audit committees, particularly those with more experience and financial expertise, were more likely to be associated with positive firm performance (Aldamen et al., 2012). However, Al-Matari et al. (2014) reported that while audit committee size has an insignificant positive relationship with firm value, larger committees may lead to poorer performance. In contrast, Fariha et al. (2022) found a significant and positive relationship between audit committee size and firm performance. These mixed results, along with the potential agency problems associated with committee size, suggest that further investigation is necessary. Therefore, committee size diversity is included as a component of board diversity in the current study.

## 2.3. Experienced Independent Directors and Corporate Performance

Current regulations do not specify requirements for the diversity components of committees. Although research highlights the importance of directors' expertise (Dass et al., 2014; Faleye et al., 2018), there is limited evidence on how directors with specific skills are assigned to the appropriate committees. Altin (2024) examined 39 previous studies, revealing a significant positive relationship between audit committee industry expertise and firms' financial performance. Similarly, Das et al. (2022) found a positive market reaction when directors with financial expertise joined audit committees, emphasizing the importance of aligning directors' skills with committee requirements. In addition to the expertise and experience of independent directors, their high level of independence is another crucial characteristic (Mohid Rahmat et al., 2009), which will be discussed further in the next sub-section. These findings highlight the importance of studying the experience of external directors as a key component of board committee diversity.

## 2.4. Non-Executive Directors and Corporate Performance

Beavers and Mobbs (2020) argue that the presence of a CEO on a nomination committee is associated with a reduced rate of independent director appointments. In contrast, Guo and Masulis (2015) found that firms with fully independent nomination committees composed entirely of non-executive directors show a stronger correlation between CEO turnover and firm performance. These findings underscore the importance of non-executive directors' independence in influencing nomination committees. Poretti et al. (2018) also found that the independence of audit committees impacts the timing of earnings announcements. The significance of non-executive directors is further highlighted by the requirement for audit committees to have at least two-thirds of their members non-executive directors to strengthen the committee's level of independence. Research shows that the independence of audit committees positively affects firm performance in both developed (Khanchel, 2007) and developing countries (Altin, 2024). Additionally, the requirement for remuneration committees to include non-executive directors is seen as a response to agency problems (Klein, 1998). Separate risk committees, composed of non-executive directors, have been found to enhance company value and improve performance compared to firms without such committees (Ghazieh & Chebana, 2021; Jia & Bradbury,

2021). Kallamu (2015) found that risk management committees with non-executive directors positively impact firms' market valuation and investment.

Similarly, Malik et al. (2020) reports that effective risk committees are significantly and positively associated with firm performance. Ugwu et al. (2021) reveal significant improvements in financial performance when most non-executive directors are on the risk management committee. Therefore, these findings support the inclusion of non-executive directors as a component of board committee diversity.

### 2.5. Gender Diversity and Corporate Performance

The literature examines how gender diversity on corporate boards impacts company values and productivity. Earlier research indicated that between 1992 and 1997, more women joined the workforce, but the increase in women holding executive positions was not as substantial (Black & Juhn, 2000). Becker (2010) argues that underrepresenting women in executive roles may reflect a systematic bias against gender diversity in board appointments, potentially placing companies at a competitive disadvantage. This bias against gender diversity in board roles may also extend to committees, which can similarly disadvantage companies. Sheerin and Garavan (2022) noted a lack of evidence regarding whether female directors operate heterogeneously in their decision-making rather than being part of a homogeneous group. They suggested that the diverse norms of female leaders can complement those of their male counterparts (Clavijo & Perray-Redslob, 2024).

Furthermore, it has been argued that female directors on committees can enhance governance quality and contribute to the benefits of diversity on corporate boards (Green & Homroy, 2018; Kakabadse et al., 2015). Including female directors can lead to more thorough analyses in complex situations, potentially resulting in a more cautious approach that improves financial performance. Gender diversity in committees can also foster discussions where members are more likely to select capable directors who contribute significantly to the company's economic success (Kahane et al., 2013). Ararat and Yurtoglu (2021) found that including female directors in committees positively impacts corporate valuation.

Some studies suggest that having a mix of genders in executive roles can improve oversight and overall corporate performance (Ali, 2016; Joecks et al., 2013). Joecks et al. (2013) provide evidence of a U-shaped relationship between gender diversity and performance among German companies, indicating that the benefits of gender diversity increase as it grows. Reguera-Alvarado et al. (2017) also found that organizations with more female directors experience lower information asymmetry and improved corporate performance. The consensus appears to be that higher gender diversity is beneficial for organizations, as it leads to the inclusion of more capable women in place of male members (Kahane et al., 2013).

However, research on the impact of female representation on corporate performance yields mixed results. Some studies (e.g., Gregory-Smith et al., 2014; Pletzer et al., 2015; Post & Byron, 2015) suggest that the gender composition of directors may have little or even a negative impact on corporate outcomes. Conversely, others argue that female directors on boards are associated with higher equity price informativeness and improved quality of corporate disclosure (Gao, 2018; Gul et al., 2011). Additionally, Khemakhem et al. (2022) and Berle et al. (2022) also show that the benefits of gender diversity extend beyond the board to specialized committees, enhancing decision-making. Garanina and Muravyev (2021) argue that to realize the full benefits of diversity on boards, women must hold positions that influence corporate decisions.

While numerous studies have explored the relationship between gender diversity on boards and financial performance, the findings often point to symbolic inclusion rather

than directly influencing performance (Chang et al., 2019; Green & Homroy, 2018). If female directors are appointed mainly for regulatory compliance, their inclusion in committees is more likely when there are clear benefits to the committee's operations.

The benefits or mixed results of the 18 studies outlined above, into board gender diversity may be used to argue for the use of the gender diversity variable as a component of committee diversity. Furthermore, there is a paucity of studies that either argue for or provide findings about gender diversity that extends beyond the board to specialist committees. Only three studies could be located following an extensive literature review. One of these three studies argues support for an examination of committee diversity (Kahane et al., 2013). The other two studies support that committee diversity goes beyond the board to specialist committees (Berle et al., 2022) and that it has a positive impact on corporate valuation (Ararat & Yurtoglu, 2021). Therefore, both the arguments and findings provide support for investigating committee diversity. Investigating the impact of committee diversity on investment risk practices is crucial. A mix of gender, skills, expertise, and backgrounds enhances decision-making, leading to more comprehensive evaluations of investment opportunities and associated risks (Bernile et al., 2018). Diversity broadens corporate discussions, vital for assessing complex investment situations and improving outcomes. Informed decision-making, strategic goals, and specialized committees can significantly impact corporate financial outcomes through enhanced investment decisions.

Therefore, this study proposes the following hypothesis:

**H1:** *There is a positive relationship between committees' diversity and corporate investment outcomes.*

### 3. Research Design

The period of annual reports for the top 300 ASX companies from 2018 to 2020 was selected for two reasons. Firstly, this period represents a pre-quota male to female implementation of the ASX 2019 corporate governance recommendation 1.5 in the 4th edition of the report. Secondly, the implementation of the ASX recommendation 1.5 is only effective from the first full financial report year after 1 January 2020 for the top 300 ASX companies. Therefore, in the reporting years prior to 2018, companies would not be aware of the impending ASX recommendation 1.9, as the circulated proposal documents were published and circulated in 2018. Consequently, the 2018 to 2020 reporting periods should be most relevant to forward planning of companies to meet the recommendation 1.9 for 2021 annual reports. This study then provides pre-implementation findings that could be useful in future studies for a pre-/post comparison.

#### 3.1. Variables Measurement

Several characteristics are identified and used to operationalize and reflect the complexity of committee diversity, the independent variable used to test the hypothesis. The dependent variable, corporate investment decisions, relies on a primary measure of corporate investment efficiency used in prior studies. These measures are discussed in the following two sub-sections.

#### 3.2. Diversity of Committees

This research examines the association between corporate governance and corporate investment risk practices, concentrating on the important role of diversity within committees. Particularly, we examine the complexity of diversity within corporate committees. We evaluate different characteristics of diversity, including their existence, the size of committees, female representation, and the presence of independent and non-executive members. These characteristics help construct an inclusive view of diversity beyond gender-centered measures.

Despite the mixed findings of the research on the influence of corporate gender diversity on financial performance (Carter et al., 2010), there are still unanswered questions about the qualitative impacts of diverse viewpoints on the effectiveness of committees. The existing research gap calls for more studies on how diversity in committees influences corporate operations. Recent studies have recognized the importance of evaluating diversity within executives and key strategic committees (Khemakhem et al., 2022). Specifically, adding females to these key strategic committees affects corporate disclosure, operations, governance, and potential investment choices and outcomes. We attempt to create a measure of committee diversity that covers these aspects to show its broad influence on organizational decision choices and investment results.

We introduce the diversity index (Coms\_Diversity) to evaluate diversity across the main strategic committees, such as sustainability, nomination, audit, executive, risk, and remuneration committees for ASX 300 in the Australian equity market. We selected these committees due to their common appearance across the sample firms, which recommends a consistent basis for our evaluations. The data for our index is collected manually, ensuring its robustness and a consistent basis for examining how the diversity of committees affects corporate investment risk practices.

Our index evaluates committees based on five key elements of diversity. First, it assesses whether the committee exists because some committees are voluntary and assigns a score of 0 for absence and 1 for presence. Next, it considers the committee size, applying a normalized measure that ranges from 0 to 1 based on the number of members. The index also looks at gender diversity, specifically the proportion of female members on the committee. Additionally, it evaluates the presence of independent members within the committee. Finally, the index considers the role of executive members, particularly the presence of non-executive members. Our measure, inspired by Carter et al. (2010), emphasizes crucial elements such as independence and non-executive membership. This approach helps us better understand committee diversity and its impact on financial outcomes. Our approach in this study seeks to offer an inclusive perspective on committee diversity, treating each element equally in alignment with our research objectives. We calculate the diversity score by assessing each criterion, and the overall diversity score is determined by averaging these individual scores. Following the methods outlined in prior literature, we normalize the aggregated scores to a standard scale from 0 to 1 to enhance comparability, as Hair et al. (2006) suggested. Details about the construction of the index, the formulas used, and the normalization method are provided in Appendix A.

### 3.3. Corporate Investment Decisions

In line with previous research, this study focuses on Return on Invested Capital (ROIC) as the primary measure of corporate investment efficiency, as discussed by Durnev et al. (2004), and Mauboussin and Callahan (2014). ROIC measures how effectively a company generates returns from its investments. It uses net profit after tax as the numerator and total invested capital as the denominator. Therefore, it provides insight into corporate investment efficiency (Durnev et al., 2004). Additionally, following prior research by Jyoti and Khanna (2021), our analysis includes two other measures of corporate investment risk practices: Return on Capital Employed (ROCE) and Return on Equity (ROE). ROCE recommends a broader assessment of profitability and capital allocation efficiency by using earnings before interest and tax (EBIT) and employing capital (equity and debt) as a denominator. This measure complements our first corporate investment efficiency (ROIC) measure by concentrating on the return from operational resource allocation after excluding short-term debts. Furthermore, as a main indicator of financial performance from an investor's viewpoint, ROE concentrates on the return generated from

shareholders' equity. ROE directly measures how effectively a company utilizes its equity financing to grow and generate economic outcomes. These three measures recommend an inclusive overview of investment risk practices, from different viewpoints of operational efficiency to profitability performance and provide a robust understanding of corporate investment dynamics. A detailed measurement of our main investment variables is presented in Appendix A.

### 3.3.1. Sample Selection and Data

For this study, we manually collect information from individual company's annual reports on different elements of corporate committees that are integral to our diversity index measurement. We capture this information from various sources such as corporate official disclosures, corporate websites, and other relevant disclosures. This specific information about individual board and committee members for each committee is not available from databases. We combine these manually collected data with financial and investment information collected through secondary data, including Bloomberg and Refinitiv databases. This study evaluates companies listed in the ASX 300 in the Australian equity market from 2018 to 2020. Following prior literature, we include additional firm-level characteristics such as corporate executives' average tenure (Exec\_Ten) and board members' average tenure (Board\_Ten) (Ham et al., 2017; O'Reilly et al., 2018). Table 1 presents a detailed overview of how the study sample is selected and spread across various industries.

**Table 1.** Sample selection and distribution.

| Panel A: Sample Selection                                        | Final Observation |              |
|------------------------------------------------------------------|-------------------|--------------|
| Data coverage 2018–2020                                          | 865               | <sup>1</sup> |
| Less: Observations dropped due to insufficient firm risk data    | 142               |              |
| Less: Observations dropped due to insufficient control variables | 41                |              |
| Final sample 2018–2020                                           | 682               |              |
| Panel B: Industry-based distribution of firms in sample          | Observations      | %            |
| Communications                                                   | 24                | 4            |
| Consumer discretionary                                           | 82                | 12           |
| Consumer staples                                                 | 41                | 6            |
| Energy                                                           | 24                | 4            |
| Financials                                                       | 102               | 15           |
| Healthcare                                                       | 57                | 8            |
| Industrials                                                      | 69                | 10           |
| Information technology                                           | 59                | 9            |
| Materials                                                        | 132               | 19           |
| Real-estate                                                      | 78                | 11           |
| Utilities                                                        | 12                | 2            |
| Total                                                            | 682               | 100          |

Note: The table outlines the sample's distribution across various years and industry sectors. <sup>1</sup> Not all companies meet the requirements for inclusion in the ASX300 for each of the three years of the study.

Our analysis also includes other financial and investment-related variables impacting corporate investment decision-making. We include return on investment (ROA), a proxy for financial performance, Tobin's Q (TQ) as a proxy for corporate investment attractiveness in the equity market, firm size (Size) and its market capital value (M\_Cap), Property, Plant, and Equipment (PPE), Capital Expenditures (Capex), and cash ratios (Cash) which can potentially related or impact on the corporate investment risk practices. We consider winsorization (to the first and 99th percentiles) across all continuous variables to address and maintain the impact of potential outliers in our analysis (Gholami et al., 2023). This method strengthens our analysis and helps us fully understand what impacts corporate investment decisions within the framework of the Australian equity market.

Panel A shows how the sample was selected for 2018 to 2020, starting with 865 observations. After removing 142 observations due to the incomplete firm-level invest-

ment data and another 41 observations due to missing control variables, the final sample includes 682 observations. Panel B shows the final sample by industry sector. Materials is the largest represented sector in the sample, with 19%, Financials at 15%, and Consumer Discretionary at 12%. The Communications and Energy sectors comprise 4% of the total, while the Utilities sector represents only 2%, showing a broad yet varied representation across different sectors.

### Empirical Models

This section introduces the empirical models used to investigate the relationship between the diversity of committees and investment efficiency.

Recent research highlights the significant impact of gender diversity on corporate boards, especially concerning corporate strategic decision-making (Lai et al., 2023). The literature highlights that board gender diversity results in broader viewpoints and higher cooperation among board members, eventually improving decision-making quality. Following these insights, other studies emphasize the importance of diversity, beyond gender diversity, across the strategic committees of the board (Green & Homroy, 2018; Khemakhem et al., 2022). We aim to deepen our understanding of diversity by evaluating its impact on a firm's investment risk practices, focusing on a broader measure of diversity that includes specialized committees. We investigate that a wider range of perspectives within committees correlates with more efficient resource allocation. This efficiency significantly affects corporate outcomes and has been identified as needing further research in the literature (Green & Homroy, 2018). We employ a statistical model incorporating multiple aspects of committee diversity, including gender diversity, to assess their potential impact on corporate investment efficiency. This approach contributes to the ongoing discussion about the strategic value of diversity within corporate governance. Thus, we propose that the diversity of corporate committees is associated with more efficient corporate investment. To explore this issue further, we propose the following empirical model:

$$\text{Investment risk practices}_{i,t} = \beta_0 + \beta_1 \text{ComsDiv}_{it} + \beta_2 \text{Controls}_{it-1} + \text{FixedEffect}_t + \varepsilon_{it} \quad (1)$$

where criterion Y (investment risk practices<sub>i,t</sub>) is represented by four measures provided in Panel A of Appendix A, which the model in Equation (1) predicts will be influenced by the predictor variables:  $\beta_1 \text{ComsDiv}_{it}$  representing the committee diversity index components;  $\beta_2 \text{Controls}_{it-1}$  representing the control variables; and  $\text{FixedEffect}_t$  accounting for year, firm, and industry fixed effects in our empirical model in Equation (1).

Our method of evaluating corporate investment efficiency includes three measures of return on invested capital (ROIC), serving as the main variable for investment efficiency, return on capital employed (ROCE) as a proxy for operational efficiency, and return on equity (ROE). This approach is according to Berk and DeMarzo (2007) as well as Penman (2013), who suggest these measures as a comprehensive tool for analyzing corporate investment risk practices. We also include year, firm, and industry fixed effects in our empirical model, negating any concerns about observed elements that can potentially impact the findings of this study.

### Control Variables

We have included some commonly used control variables (such as firm size (Size)), that follow the control variables used in the previous literature (Campbell & Mínguez-Vera, 2008). Other control variables used in prior studies and included in this study are market capital value (M\_Cap) to control for firm size when assessing performance (Demsetz & Villalonga, 2001), Property, Plant, and Equipment (PPE) to control of capital intensity in investment efficiency models (Biddle et al., 2009), Capital Expenditures (Capex) used as

a control variable in investment sensitivity models (Chen et al., 2006), and liquidity ratio (Cash) used as proxy for cash holdings as a control variable (Opler et al., 1999). Several additional control variables, used by Magnanelli et al. (2021) in their panel data regression, cover diverse elements of organizational leadership and their characteristics (such as executive board members' tenure and board members' tenure) as well as other operational and financial elements (such as return on assets (ROA), and Tobin's Q (TQ)). By incorporating these extra variables, we ensure the robustness of our analysis and enhance the reliability of our results, minimizing the impact of any external factors that could deviate from the results.

### Descriptive Statistics

Table 2 shows detailed descriptive statistics for the study's variables. The average score of committees' diversity (Coms\_Diversity) is 3.53, indicating moderate diversity. Other investment and financial performance measures, such as ROIC and ROCE, also show an average of 0.0019 and 2.83, respectively, suggesting an appropriate variation in the efficiency of resourced capital. The Return on Equity (ROE) and Return on Assets (ROA), with averages of 0.654 and 4.889, hint at various levels of profitability across companies. Tobin's Q (TQ), with an average of 0.292, points to a range of values reflecting the company's attractiveness to investors. The firm size and market capitalization metrics suggest a broad spectrum of companies' presence in the market, with average values illustrating this diversity. As shown through property, plant, and equipment (PPE) and capital expenditures (Capex), capital investments display wide variations, indicating differing investment strategies. The relatively low average cash holdings (0.0746) highlight limited liquidity. Executive and Board Tenure, with means of 0.153 and 0.281, reflect the range of leadership experiences, indicating a blend of stability and potential for fresh perspectives in governance. This comprehensive data set forms the basis for our examination of the impact of committee diversity on firm investment risk practices, highlighting the importance of considering a broad array of financial and operational characteristics.

**Table 2.** Descriptive Statistics.

|                | N   | Mean   | STD    | p25     | Med     | p75    |
|----------------|-----|--------|--------|---------|---------|--------|
| Coms_Diversity | 682 | 3.5308 | 0.3588 | 3.4489  | 3.5649  | 3.7201 |
| ROIC           | 682 | 0.0019 | 1.0012 | −0.1655 | 0.0331  | 0.3218 |
| ROCE           | 682 | 2.8258 | 1.1245 | 2.2123  | 2.7287  | 3.5009 |
| ROE            | 682 | 0.6538 | 0.1217 | 0.6278  | 0.6628  | 0.6985 |
| ROA            | 682 | 4.8894 | 0.4284 | 4.7902  | 4.9219  | 4.9526 |
| TQ             | 682 | 0.2921 | 0.3273 | 0.0457  | 0.2032  | 0.4094 |
| Size           | 682 | 0.0005 | 0.9901 | −0.5843 | −0.0158 | 0.4921 |
| M_Cap          | 682 | 7.4991 | 1.4107 | 6.4691  | 7.3359  | 8.4104 |
| PPE            | 682 | 0.2456 | 0.2673 | 0.0135  | 0.1297  | 0.4397 |
| Capex          | 682 | 4.2496 | 3.1611 | 0.3593  | 2.1974  | 5.6408 |
| Cash           | 682 | 0.0746 | 0.1282 | 0.0120  | 0.0364  | 0.0818 |
| Exec_Ten       | 682 | 0.1533 | 0.1139 | 0.0923  | 0.1325  | 0.1817 |
| Board_Ten      | 682 | 0.2806 | 0.1394 | 0.1993  | 0.2491  | 0.3245 |

Note: This table provides a summary of descriptive statistics for various metrics, including the total observations (N), mean, standard deviation (STD), and the 25th (p25), 50th (median), and 75th (p75) percentiles for each variable, showcasing the distribution's breadth. Variable definitions can be found in Appendix A Panel C.

Table 3 employs a Pearson's correlation matrix to examine the interplay between corporate governance, financial performance, and operational metrics.

**Table 3.** Correlation Matrix.

| Variables          | 1        | 2        | 3        | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 11      | 12      | 13    |
|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|---------|-------|
| (1) Coms_Diversity | 1.000    |          |          |          |          |          |          |          |          |          |         |         |       |
| (2) ROIC           | 0.223 *  | 1.000    |          |          |          |          |          |          |          |          |         |         |       |
| (3) ROCE           | −0.046   | 0.207 *  | 1.000    |          |          |          |          |          |          |          |         |         |       |
| (4) ROE            | 0.184 *  | 0.379 *  | 0.271 *  | 1.000    |          |          |          |          |          |          |         |         |       |
| (5) ROA            | 0.257 *  | 0.460 *  | 0.051    | 0.480 *  | 1.000    |          |          |          |          |          |         |         |       |
| (6) TQ             | −0.127 * | 0.123 *  | 0.347 *  | 0.112 *  | −0.038   | 1.000    |          |          |          |          |         |         |       |
| (7) Size           | 0.440 *  | 0.033    | −0.230 * | 0.049    | 0.072    | −0.494 * | 1.000    |          |          |          |         |         |       |
| (8) M_Cap          | 0.496 *  | 0.189 *  | −0.045   | 0.231 *  | 0.118 *  | −0.025   | 0.487 *  | 1.000    |          |          |         |         |       |
| (9) PPE            | 0.074    | −0.023   | −0.234 * | −0.066   | 0.012    | −0.118 * | 0.028    | 0.069    | 1.000    |          |         |         |       |
| (10) Capex         | −0.117 * | −0.007   | −0.106 * | −0.036   | 0.010    | 0.014    | −0.139 * | −0.080 * | 0.406 *  | 1.000    |         |         |       |
| (11) Cash          | −0.167 * | −0.143 * | 0.089 *  | −0.135 * | −0.164 * | 0.381 *  | −0.401 * | −0.170 * | −0.044   | 0.040    | 1.000   |         |       |
| (12) Exec_Tn       | 0.025    | 0.066    | 0.042    | 0.054    | 0.022    | 0.092 *  | −0.061   | 0.008    | −0.037   | −0.073   | 0.091 * | 1.000   |       |
| (13) Board_Tn      | −0.110 * | 0.093 *  | 0.029    | 0.064    | 0.038    | 0.114 *  | −0.119 * | −0.051   | −0.085 * | −0.087 * | 0.084 * | 0.357 * | 1.000 |

Note: The table shows Pearson's correlation analysis outcomes for the study variables. Asterisks denote statistical significance at the 5% threshold.

Key findings shown in Table 3 include a positive correlation between diversity (Coms\_Diversity) and Return on Invested Capital (ROIC), indicating that diversity enhances investment efficiency. Furthermore, larger companies and those with higher market value have higher diversity. There is an inverse relationship between the committee's diversity and TQ. Financial measures such as ROIC, ROCE, ROE, and ROA show complex associations with other measures, highlighting the complexity of corporate financial and governance interconnections. Liquidity shows a positive association with TQ but a negative association with other variables, highlighting its complex role in financial evaluations. To tackle potential multicollinearity, which could deviate from the impact of predictor variables, we performed Variance Inflation Factor (VIF) tests. The results show values below 5, confirming our variables' independence and thus reinforcing our analysis's reliability (Kutner et al., 2005).

## 4. Results

The reported results in this section will be separated into three sub-sections. The first subsection will provide the main results using Equation (1) for three dependent variables representing the investment risk practice, The second sub-section reports the results of an additional analysis using Equation (2). This equation uses a compilation of the three dependent variables used in Equation (1) into a single dependent variable. The final subsection reports the results of the robustness testing. The use of separate subsections provides a concise and precise description of the experimental results, their interpretation, as well as the comments derived from the experimental results.

### 4.1. Main Regression Results for Equation (1) for Three Dependent Variable Models

Our panel regression analysis (Table 4) examines the impact of corporate committee diversity on different elements of corporate investment risk practices, including ROIC (model 1), ROCE (model 2), and ROE (model 3). The analysis shows how committees' diversity affects corporate investment decisions. Diversity within committees significantly increases ROIC (coefficient = 0.7826). This finding suggests that higher diversity within committees is linked to higher investment returns. These results advocate that diverse perspectives contribute to more effective investment decisions, reinforcing the findings of Carter et al. (2010), who evidence that diversity positively impacts firm value by broadening decision-making perspectives.

However, the impact of diversity is not consistent across all dependent variables. Despite both ROIC and ROE benefiting from diversity, with ROE displaying a moderate positive coefficient of 0.0583, the ROCE does not show a significant association. These findings show that committee diversity substantially impacts strategic and long-term investment decisions rather than short-term operational efficiency. Day-to-day company operations more directly influence operational efficiency and are less affected by board governance. The variation in impact highlights the critical role of committee diversity in shaping different aspects of corporate investment risk practices. Committees benefit from diverse backgrounds and skills, leading to better problem-solving. This approach can develop fresh and cautious investment strategies (Harjoto et al., 2018), leading to higher return on invested capital (ROIC) and return on equity (ROE). Our findings show that having diverse committees enhances the quality of decision-making, especially in areas directly affected by these strategic decisions, rather than in immediate operational efficiencies. These findings support the argument made by Bernile et al. (2018), who discovered that diversity within corporate committees plays a key role in reducing financial volatility and enhancing decision-making.

**Table 4.** Committee Diversity and Corporate Investment Risk practices.

| Variables                             | (ROIC Model 1)          | (ROCE Model 2)          | (ROE Model 3)          |
|---------------------------------------|-------------------------|-------------------------|------------------------|
| Coms_Diversity                        | 0.7826 ***<br>(0.1687)  | −0.0008<br>(0.2397)     | 0.0583 **<br>(0.0247)  |
| ROA                                   | 0.7503 ***<br>(0.0583)  | 0.0506<br>(0.0828)      | 0.0700 ***<br>(0.0085) |
| TQ                                    | −0.2805<br>(0.2449)     | 0.3690<br>(0.3481)      | −0.0751 **<br>(0.0359) |
| Size                                  | 0.2905 **<br>(0.1305)   | −0.0217<br>(0.1854)     | 0.0066<br>(0.0191)     |
| M_Cap                                 | 0.2287 ***<br>(0.0713)  | 0.0970<br>(0.1013)      | 0.0581 ***<br>(0.0105) |
| PPE                                   | −1.2143 ***<br>(0.3848) | −1.6194 ***<br>(0.5471) | −0.1201 **<br>(0.0565) |
| Capex                                 | 0.0121 **<br>(0.0061)   | 0.0046<br>(0.0086)      | 0.0013<br>(0.0009)     |
| Cash                                  | −0.5375<br>(0.3496)     | −0.0875<br>(0.4970)     | −0.0373<br>(0.0513)    |
| Exec_Ten                              | −0.2852<br>(0.3677)     | 0.0427<br>(0.5227)      | −0.0556<br>(0.0539)    |
| Board_Ten                             | 0.4709<br>(0.3144)      | −0.1650<br>(0.4468)     | 0.0772 *<br>(0.0461)   |
| Constants                             | −7.8653 ***<br>(0.8274) | 2.1707 *<br>(1.1762)    | −0.2953 **<br>(0.1214) |
| Year, Firm, and Industry Fixed Effect | Yes                     | Yes                     | Yes                    |
| Observations                          | 682                     | 682                     | 682                    |
| Adjusted R <sup>2</sup>               | 0.3714                  | 0.6241                  | 0.2424                 |

Note: This table outlines findings from panel regression analyses exploring the impact of committee diversity (Coms\_Diversity) on corporate investment risk practices. It delves into investment efficiency (via ROIC in Model 1), into operational efficiency (via ROCE in Model 2) and into profitability (via ROE in Model 3). The analyses incorporate year, firm, and industry fixed effects and apply robust standard errors clustered by firm. Symbols \*\*\*, \*\*, and \*, denote statistical significance at the 1%, 5%, and 10% thresholds, respectively, with *p*-values in parentheses. Variable definitions are detailed in Appendix A Panel C.

Other control variables also reveal significant findings. For example, Return on Assets (ROA) demonstrates a robust and positive connection with both Return on Invested Capital (ROIC) and Return on Equity (ROE). This suggests that effective asset allocation enhances investment and equity returns. Conversely, investments in Property, Plant, and Equipment (PPE) have a negative effect on investment outcomes across all models. This indicates that allocating more capital to tangible assets like PPE may not always lead to improved investment results. The M\_Cap and Capex are significant factors in financial analysis. M\_Cap has a positive relationship with both ROIC and ROE. Meanwhile, Capex has a modest positive impact on ROIC. This finding reflects the complexity of market perception and the impact of investment strategies on corporate returns.

Our analysis highlights the complex relationship between committee diversity and corporate investment risk practices while pointing to the complex nature of investment decision-making procedures within corporations.

#### 4.2. Additional Analysis—Investment Efficiency

Building on [McNichols and Stubben \(2008\)](#) work on corporate investment risk practices, our study expands its analysis by incorporating additional measures of investment efficiency risk practices. Theoretically, firms should invest in all projects with a positive net present value (NPV) until the marginal benefits meet the marginal costs ([Hayashi, 1982](#)). Corporate investment decisions are strategically aimed at boosting competitive advantage and financial performance, primarily through enhanced investment efficiency ([Attig et al., 2016](#)). The investment risk practices efficiency analysis, therefore, is crucial for making well-informed investment choices and improving a firm's overall strategic and financial health.

Measuring corporate investment efficiency risk practices involves assessing a firm's ability to select projects with positive net present values (NPVs), a key indicator of financially sound investments (Gomariz & Ballesta, 2014). Although no direct measure exists, the method by McNichols and Stubben (2008) is an early attempt to quantify optimal investment levels. Their model identifies deviations from expected investment levels, shown as error terms, as indicators of inefficiency. We adopt this model to determine optimal investment levels and use deviations as efficiency indicators. Predicting future corporate investment involves assessing growth opportunities through the market-to-book value of assets (Q) and cash flow (CF), aligning investments with strategic goals. Our approach includes aggregating each firm's total investment—research and development, capital expenditure, and acquisitions, adjusted by selling property, plant, and equipment—and normalizing it against the prior year's total assets. We estimate this investment model cross-sectionally by year and industry, allowing for a comprehensive analysis of investment risk practices across sectors and overtime. Corporate investment risk efficiency practices is measured from the model's residuals, where negative residuals indicate underinvestment and positive ones suggest overinvestment. To put these residuals in a positive light, we multiply their absolute values by  $-1$ ; higher values thus indicate higher efficiency. This method helps evaluate how closely a firm's investment actions match optimal levels. For detailed calculations and assumptions, see Appendix A.

$$\text{Investment efficiency risk practices}_{i,t} = \beta_0 + \beta_1 Q_{i,t} + \beta_1 CF_{i,t} + \varepsilon_{it} \quad (2)$$

Our regression analysis, as depicted in Table 5, explores the impact of diversity within corporate committees on corporate investment efficiency practices. The findings highlight the significant influence of committees' diversity, identified through the diversity index (Coms\_Diversity), on enhancing corporate investment efficiency, with a positive and statistically significant coefficient of 0.0180 ( $p < 0.05$ ). This finding demonstrates the importance of diverse perspectives in refining investment decisions and resource allocation. Our findings highlight how diversity in the committees' viewpoints can enhance the quality of investment decisions. Our findings extend the findings of Carter et al. (2010), which state that committee diversity enhances firm valuation in the market by extending the range of viewpoints in decision-making processes.

The analysis of the other control variables shows that larger firms have more efficient investments. On the other hand, higher capital expenditures are linked to lower efficiency, pointing to overinvestment or inefficient capital use. Similarly, higher liquidity negatively impacts investment efficiency, recommending lower disciplined investment decisions in cash-rich companies. Additionally, longer board tenure is positively associated with investment efficiency, indicating the benefits of experienced board members (Harjoto et al., 2018). However, longer executive tenure does not have a significant positive effect. Furthermore, a strong positive relationship between Property, Plant, and Equipment (PPE) spending and efficiency highlights the importance of managing tangible assets effectively.

Our results provided in Table 5 support our hypothesis that the diversity of committees significantly influences corporate investment efficiency risk practices. These results expand the existing literature on corporate governance by highlighting the strategic significance of committee diversity in influencing effective investment choices. Our study demonstrated the necessity of integrating diverse viewpoints at the decision-making level to enhance corporate risk investment practices outcomes and overall firm performance.

**Table 5.** Additional Analysis: Corporate Investment Efficiency Risk Practices.

| Variables                             | (1)                     |
|---------------------------------------|-------------------------|
| Coms_Diversity                        | 0.0180 **<br>(0.0081)   |
| ROA                                   | 0.0008<br>(0.0057)      |
| TQ                                    | 0.0084<br>(0.0108)      |
| Size                                  | 0.0096 **<br>(0.0048)   |
| M_Cap                                 | −0.0006<br>(0.0028)     |
| PPE                                   | 0.0470 ***<br>(0.0142)  |
| Capex                                 | −0.0064 ***<br>(0.0005) |
| Cash                                  | −0.0367 *<br>(0.0205)   |
| Exec_Ten                              | −0.0346<br>(0.0249)     |
| Board_Ten                             | 0.0449 **<br>(0.0203)   |
| Constants                             | −0.1122 ***<br>(0.0353) |
| Year, Firm, and Industry Fixed Effect | Yes                     |
| Observations                          | 682                     |
| Adjusted R <sup>2</sup>               | 0.3469                  |

Note: This table presents additional analysis focusing on the influence of committee diversity (Coms\_Diversity) on corporate investment efficiency. The analyses incorporate year, firm, and industry fixed effects and apply robust standard errors clustered by firm. Symbols \*\*\*, \*\*, and \*, denote statistical significance at the 1%, 5%, and 10% thresholds, respectively, with *p*-values in parentheses. Variable definitions are detailed in Appendix A.

#### 4.3. Additional Analysis—Robustness Test-Endogeneity

We perform additional tests to validate the robustness of our main results. robustness analyses include two additional tests (A) for endogeneity, and sensitivity as well as (B) using alternative measures of corporate investment efficiency. In the following sections, we outline the results of these analyses.

Firstly, our study’s term ‘endogeneity’ refers to the potential correlations between explanatory variables and the model’s error term, which can stem from omitted variables, measurement errors, or simultaneous causality. To tackle the potential endogeneity issue commonly encountered in research concerning corporate governance and investment risk practices, we employ robust methodologies inspired by [Petrenko et al. \(2016\)](#) and [Ham et al. \(2017\)](#). These methods aid in alleviating concerns regarding reverse causality and omitted variables. Despite the use of firm- and year-fixed effects in our panel regression analysis to control for unobserved heterogeneity, to further strengthen our results, we use an Instrumental Variable (IV) approach, following prior literature ([Gholami et al., 2022](#)). Secondly, we introduce an instrument for committees’ diversity (Coms\_Diversity), benchmarked against industry standards (Alt\_Coms\_Diversity\_In), to generate a variable standardized across sectors. Standardization includes adjusting Coms\_Diversity by the sector mean and standard deviation, ensuring comparability across different sectors.

$$Alt_{ComsDiversity_{In}} = \frac{ComsDiversity - meanComsDiversity}{SD}$$

In the first stage, we regress our endogenous variable, *Alt\_Coms\_Diversity\_In*, along with other exogenous control variables to estimate its predicted values (panel A in Table 6). In the second stage, we use the predicted values of diversity (*Pre\_Coms\_Div*) to assess the impact on corporate investment. We evaluate this impact across all three models (ROIC, ROCE, and ROE). Panel B presents the second stage least squares (2SLS) regression results, focusing on the effect of predicted committee diversity (*Pre\_Coms\_Div*) on three key investment metrics. The analysis reveals that predicted diversity has a substantial and statistically significant positive effect on ROIC with a coefficient of 0.8739 ( $p < 0.01$ ). This finding supports the notion that higher levels of committee diversity can significantly enhance investment efficiency. However, the results for ROCE and ROE are mixed, with a non-significant impact on ROCE (coefficient of 0.0663) and a moderately significant favorable influence on ROE (coefficient of 0.0536,  $p < 0.05$ ).

**Table 6.** Robustness Tests: Instrument variable (IV) method.

| Panel A: First Stage of Measuring Predicted Values |                         |                    |                       |
|----------------------------------------------------|-------------------------|--------------------|-----------------------|
| Variables                                          | (1)                     |                    |                       |
| <i>Alt_Coms_Diversity_In</i>                       | 0.2848 ***<br>(0.0079)  |                    |                       |
| ROA                                                | 0.0902 ***<br>(0.0159)  |                    |                       |
| TQ                                                 | 0.0898 ***<br>(0.0278)  |                    |                       |
| Size                                               | 0.0551 ***<br>(0.0125)  |                    |                       |
| <i>M_Cap</i>                                       | −0.0120<br>(0.0080)     |                    |                       |
| PPE                                                | 0.0598 **<br>(0.0293)   |                    |                       |
| Capex                                              | −0.0037 ***<br>(0.0013) |                    |                       |
| Cash                                               | 0.1026 *<br>(0.0587)    |                    |                       |
| <i>Exec_Ten</i>                                    | 0.0897<br>(0.0703)      |                    |                       |
| <i>Board_Ten</i>                                   | −0.0716<br>(0.0581)     |                    |                       |
| Constants                                          | 3.0637 ***<br>(0.0931)  |                    |                       |
| Year Fixed Effect                                  | Yes                     |                    |                       |
| Observations                                       | 682                     |                    |                       |
| Adjusted R <sup>2</sup>                            | 0.7732                  |                    |                       |
| Panel B: 2SLS Regression Results                   | (1)                     | (2)                | (3)                   |
| <i>Pre_Coms_Diversity</i>                          | 0.8739 ***<br>(0.19063) | 0.0663<br>(0.2708) | 0.0536 **<br>(0.0281) |
| Year Fixed Effect                                  | Yes                     | Yes                | Yes                   |
| Observations                                       | 682                     | 682                | 682                   |
| Adjusted R <sup>2</sup>                            | 0.3707                  | 0.6241             | 0.2392                |

Note: This table presents robustness test outcomes via the Instrumental Variable (IV) method. Panel A executes a first-stage regression with an alternate committee's instrument (*Alt\_Coms\_Diversity\_In*), showing its predictive capability. Panel B advances with Second Stage Least Squares (2SLS) regression analyses, utilizing these forecasts to evaluate diversity's effect in three models. Year, firm, and industry effects are considered in both panels, with significance denoted by \*\*\*, \*\*, and \*, representing the 1%, 5%, and 10% levels, respectively. Variable definitions are available in Appendix A.

These IV test results validate the robustness of our primary analysis and significantly emphasize the influence of committees' diversity in shaping corporate risk investment practices. By applying the IV approach to ensure standardization across industries and address endogeneity concerns, our study highlights the critical role of committee diversity in enhancing corporate governance and strategic investment decision-making, aligning with our main study's overarching conclusions.

## 5. Conclusions

This study provides an original and innovative approach to examining the major influences of committees' diversity on investment decisions. The study is original and innovative as it goes beyond prior studies, which have focused on board diversity, to consider committee diversity, which has been largely overlooked by researchers.

Therefore, this study investigates the impact of diversity within corporate committees on investment risk practices among firms listed on the ASX 300 in the Australian stock market. We examine aspects such as the presence and size of key committees (sustainability, audit, nomination, executive, risk, and remuneration), gender representation, the inclusion of independent members, and the proportion of non-executive directors. Our research, employing panel regression models, robustness tests, and instrumental variable methods, underscores the significant role of committee diversity in shaping corporate risk investment decisions.

Our findings indicate that greater diversity within committees enhances corporate risk investment decision-making and improves outcomes. This finding supports the notion that diverse perspectives improve risk investment decisions, echoing [Carter et al. \(2010\)](#), who found that diversity positively influences firm value by broadening decision-making perspectives. However, the effect of committee diversity varies across different investment measures. It has a more substantial impact on long-term and strategic decisions, as demonstrated by its influence on Return on Invested Capital (ROIC) and Return on Equity (ROE), compared to short-term operational metrics like Return on Capital Employed (ROCE). These long-term and short-term measures are described in Appendix A. Typically, these short-term metrics are more relevant to day-to-day management, while long-term decisions are tied to board-level governance.

Our main and additional analysis results suggest that while committee diversity improves decision-making quality, its benefits are more noticeable in areas influenced by strategic decisions rather than immediate operational efficiency. This main finding shown in Table 4 aligns with [Bernile et al. \(2018\)](#), indicating that committees' diversity decision-making indirectly influences board decisions. As argued by [Dellaportas et al. \(2022\)](#) and [Smyth et al. \(2022\)](#), cross-disciplinary research helps uncover the complex and situational nature of diversity, as different components of committee diversity affect decisions differently. Our findings suggest that diverse committees reduce financial risk and volatility while improving decision-making quality. In addition to these main findings, our additional analysis shows that diversity within committees contributes to greater investment efficiency. Firms with more diverse committees allocate resources more effectively, avoiding both under- and over-investment, and thereby achieve closer alignment with optimal investment levels. This suggests that the benefits of diversity extend beyond improving the quality of strategic decision-making to also fostering disciplined investment practices that enhance overall firm performance; that is, the result from our additional analysis shown in Table 5 also highlights the importance of diverse committee perspectives in refining investment decisions and improving resource allocation, ultimately enhancing investment efficiency.

This research makes several contributions to the existing literature on corporate governance and investment risk efficiency and it provides practical implications. Firstly, it provides empirical evidence that committee diversity enhances decision-making quality and financial returns through more strategic investment choices. This broadens our understanding of how overall committee diversity influence board outcomes, particularly in long-term strategic decisions versus short-term operational efficiencies. It offers a fresh perspective on how committee diversity can be more effectively utilized in corporate governance. Secondly, our study provides practical insights for companies, particularly those listed on the ASX 300, on structuring their committees to boost investment efficiency. By incorporating diverse per-

spectives, companies can achieve more informed and strategic decision-making processes. Thirdly, by clarifying how overall committee diversity affects various investment decisions, this research lays the groundwork for future studies to explore these dynamics across different sectors and cultural contexts, potentially leading to tailored governance strategies. Fourthly, the diversity within each committee, depending on its membership, may have varying effects on reducing financial risk, improving decision-making quality, and enhancing profitability. Future research can investigate whether the diversity within individual committees influences these factors differently.

Fifthly, the examination of the impact of diversity in voluntary committees, such as the sustainability committee, can address complex and critical issues identified by [Lukka and Becker \(2023\)](#), such as the role of diversity in environmental and social decision-making. Future research into corporate social and environmental activities, particularly those involving gender and other diversity components, is recognized by [Maran et al. \(2023\)](#) and supported by theoretical reflections from [Reilley and Löhlein \(2023\)](#), as essential for understanding the diversity and complexity of individuals' roles within committees.

From a practical implication perspective, the use of only data provided in databases is not sufficient to identify the characteristics of committee members and their demographics (such as qualification, gender, etc.). This additional information either requires large database providers to extend their data provisions, requires manual examination of annual reports, or full disclosure of this additional information by companies in an electronic form. Finally, companies should be guided by these findings and encouraged to select a more diverse set of board members as the pool for appointments to the various mandatory and voluntary committees.

The selection of a three-year period normally may be viewed as a limitation of the study. However, the knowledge about the implementation of ASX recommendation 1.9 was not known prior to 2018, as it was in 2018 that the consulting report document was circulated. Therefore, adding years prior to 2018 would not contribute to the scope of the study. There were a small number of companies that were not included in the top 300 companies for all 3 years of the study but this represents a small reduction in the number of companies included in the analysis, which is supported by the fixed effect results for these analyses.

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Appendix A. Variable Definitions and Abbreviations

| Variables                                                  | Metrics' Abbreviation | Measurement and Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Panel A: Independent Variable Index                        |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Committees' diversity                                      | <i>Coms_Diversity</i> | <p>To systematically quantify the heterogeneity in committee compositions across firms, we develop the <i>Coms_Diversity</i> index, a composite metric integrating multiple diversity dimensions across key governance committees, including the Executive, Audit, Remuneration, Recruitment, Sustainability, and Nomination Committees. The index is constructed using a multi-factor aggregation framework and is normalized to ensure comparability across firms and time periods. For each committee <i>j</i> within firm <i>i</i> at time <i>t</i>, diversity is assessed across five key dimensions. Existence (<i>Existence<sub>j,i,t</sub></i>)—Binary indicator capturing committee presence (1 = present, 0 = absent). Size (<i>Size<sub>j,i,t</sub></i>)—Relative committee size, standardized against total board size. Gender Representation (<i>Per_Wom<sub>j,i,t</sub></i>)—Proportion of female members within the committee. Independence (<i>Per_Indep<sub>j,i,t</sub></i>)—Proportion of independent directors. Non-Executive Representation (<i>Per_NonExec<sub>j,i,t</sub></i>)—Proportion of non-executive members. Each committee's diversity score is computed as a linear aggregation of these factors, each weighted equally to avoid arbitrary prioritization:</p> $D_{j,i,t} = w_1 (Existence_{j,i,t}) + w_2 (Size_{j,i,t}) + w_3 (Per_{Wom_{j,i,t}}) + w_4 (Per_{Indep_{j,i,t}}) + w_5 (Per_{NonExec_{j,i,t}});$ <p>where <i>w_1</i>, <i>w_2</i>, <i>w_3</i>, <i>w_4</i>, <i>w_5</i> are predefined equal weights summing to 1, ensuring that each factor contributes proportionally to the composite measure. The firm-level <i>Coms_Diversity</i> score is derived by aggregating committee-level diversity scores across all relevant committees. To ensure consistency and mitigate committee dominance effects, we implement an equal-weighted summation:</p> $ComsDiversity_{i,t} = \sum_{j=1}^n D_{j,i,t};$ <p>where <i>NN</i> represents the total number of committees. Since firms may have differing numbers of committees, <i>Coms_Diversity</i> scores are further normalized on a [0, 1] scale using min-max scaling to facilitate cross-firm comparability:</p> $ComsDiversity_{i,j}^{norm} = \frac{ComsDiversity_{i,t} - \min(ComsDiversity)}{\max(ComsDiversity) - \min(ComsDiversity)};$ <p>where higher values indicate a more diverse and structurally inclusive governance framework.</p> |
| Variables                                                  | Metrics' Abbreviation | Measurement and Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Panel B: Dependent Variables for Investment Risk Practices |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Return On Invested Capital for Investment Efficiency       | <i>ROIC</i>           | <p>ROIC quantifies a company's ability to direct its capital towards profitable investments, calculated as Net Profit After Taxes (NPAT) divided by Total Invested Capital. This ratio provides insight into profitability against all utilized capital, encompassing debt and equity financing.</p> $ROIC_{i,t} = \frac{Net\ Profit\ After\ Taxes\ (NPAT)}{Total\ Invested\ Capital}$ <p>NPAT signifies a company's profits post-tax, showing the real earnings available to debt and equity investors. Total Invested Capital, combining debt, equity, and retained earnings, mirrors the entirety of capital used in operations, covering all capital sources. A higher ROIC suggests better capital use for profit generation, revealing how well a company yields returns on all invested capital. This makes ROIC essential for assessing a company's profit-making and investment appeal.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Return on capital employed for Operational Efficiency      | <i>ROCE</i>           | <p>ROCE evaluates a company's capital usage efficiency and profitability, computed as Earnings Before Interest and Tax (EBIT) divided by Capital Employed (Total Assets minus Current Liabilities). This measure highlights how effectively a company utilizes long-term capital to generate profits.</p> $ROCE_{i,t} = \frac{Earnings\ Before\ Interest\ and\ Tax\ (EBIT)}{Total\ Assets - Current\ Liabilities}$ <p>EBIT, the operational profit before interest and tax deductions, reflects the company's core operational profitability. Capital Employed, the difference between Total Assets and Current Liabilities, represents the long-term capital from creditors and shareholders used in operations, excluding short-term debts. ROCE, indicating the efficiency of core capital use for earnings, shows the operational efficiency and profitability of capital use. A higher ROCE denotes more efficient profit generation from the capital employed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Return on equity                                     | ROE                   | <p>ROE quantifies a company’s profitability by showing the profit generated per unit of shareholder investment. It is derived from dividing Net Income by Shareholder’s Equity, demonstrating how efficiently a company uses shareholder funds to produce profits.</p> $ROE_{i,t} = \frac{Net\ Income}{Shareholders' Equity}$ <p>Net Income is the company’s earnings after deducting all expenses, taxes, and costs from its total revenue, signifying the remaining profit for shareholder distribution or reinvestment. Shareholders’ Equity, or stockholders’ equity, reflects the residual assets returned to shareholders after asset liquidation and debt settlement, incorporating capital stock, retained earnings, and additional paid-in capital. ROE serves as a financial performance metric, assessing how effectively a company utilizes shareholder investments to foster earnings growth. A higher ROE suggests greater efficiency in profit generation from shareholder equity.</p>                                                                                                                                                                                                        |
| Corporate investment efficiency                      | Investment            | <p>For firm i and year t, total investment is calculated as the aggregate of research and development expenses, capital expenditures, and acquisition costs, less any revenue from the disposal of property, plant, and equipment (PPE). This total is then normalized by the firm’s total assets from the preceding year. Adopting the approach from <a href="#">McNichols and Stubben (2008)</a>, investment efficiency is assessed by the residuals from a regression model that predicts investment levels based on the ratio of market to book value of assets (Q) and the firms’ cash flow (CF). This model posits that deviations from expected investment levels suggest inefficiency.</p> $Investment_{i,t} = \beta_0 + \beta_1 Q_{i,t} + \beta_2 CF_{i,t} + \varepsilon_{it}$ <p>Investment efficiency is determined to be inversely related to the absolute value of the residuals from the regression model; hence, a higher value (multiplied by −1 to indicate positive impact) reflects greater efficiency. The model is estimated separately for each year and industry, accommodating variations specific to each industry and time period in investment risk practices and efficiency.</p> |
| Variables                                            | Metrics’ Abbreviation | Measurement and Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Panel C: Firm Level Control Variables                |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Return on assets                                     | ROA                   | This metric assesses how efficiently a company generates profits from its assets, calculated by dividing after-tax net income by total assets, expressed as a percentage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Tobin Q ratio                                        | TQ                    | This metric calculates investment appeal by summing the market value of equity and debt, then dividing by the assets’ replacement cost. A value above 1 suggests a firm’s market value exceeds its asset costs, indicating potential overvaluation or anticipated growth. Sources: Refinitiv Eikon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Firm size                                            | Size                  | This metric represents the natural logarithm of the total assets at the year-end for company i in the fiscal year t.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Market capital                                       | M_Cap                 | This metric is the natural logarithm (ln) of the total market value of all outstanding shares of a company.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Property, plant, and equipment                       | PPE                   | This ratio represents the proportion of Property, Plant, and Equipment (PP&E) at time “t” compared to the total assets from the previous period, as sourced from Refinitiv Eikon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Capital expenditure ratio                            | Capex                 | This ratio indicates the proportion of a company’s total revenue reinvested in physical assets, reflecting the extent of earnings allocated to capital asset investment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Liquidity ratio                                      | Cash                  | This ratio assesses a company’s ability to pay off its short-term liabilities with its cash and cash equivalents, highlighting its immediate financial stability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Panel D: Executive Characteristics Control Variables |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Executives’ average tenure                           | Exec_Ten              | This variable represents the standardized average tenure of a company’s executives, showcasing their experience and the stability contributed to leadership roles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Board members average tenure                         | Board_Ten             | This variable measures the adjusted average tenure of a company’s board members, highlighting their collective experience and the stability of the governance structure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

Sources: Refinitiv Eikon.

## Note

- <sup>1</sup> Corporate investment efficiency refers to the alignment between a firm's actual investment activities and the optimal investment level expected based on the firm's growth opportunities. This concept encompasses both over-investment, where investments exceed the optimal threshold, and under-investment, where investments fall short of what is required to fully capitalize on growth opportunities (McNichols & Stubben, 2008).

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