University of Southampton

Faculty of social science

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Managerial Overconfidence and Decision-Making: The US Evidence

by

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Thesis for the degree of Doctor of Philosophy

February 2024

University of Southampton

Abstract

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This thesis aims to enhance current understanding of managerial characteristics on corporate decision-making. This research comprises three independent but interrelated studies. The first study presents a systematic review of the literature, covering existing theories and empirical evidence on the characteristics and compensation of managers and their influence on financial statements, along with their determinants. The second study investigates the effect of managerial overconfidence on the comparability of financial statements. The third study explores the impact of managerial overconfidence on corporate labor investment.

The first paper provides a comprehensive systematic literature review on existing research concerning managers' demographic characteristics (e.g., gender, age, education) and their compensation in relation to financial reports quality, as well as the impact on the managers themselves. The goal is to synthesize and expand upon the current body of knowledge from both theoretical perspectives and empirical evidence. In this review, three databases are utilized, covering multiple disciplines such as accounting, business, economics, finance, etc, and including top-ranked journals. The sample comprised 214 high-quality papers spanning from 1980 to 2023, which are included in the analysis. The study reveals that a significant portion of the existing literature is based on single-market studies rather than cross-national comparisons. Additionally, this study finds that the current research predominantly focuses on the corporate level rather than on a national scale. The paper outlines future research directions for exploring managerial characteristics and compensation.

The second paper investigates the relationship between CEO overconfidence and the comparability of financial statements. Utilizing data from the US market spanning from 1994 to 2021, this study finds that firms with overconfident CEOs exhibit a positive relationship with financial statement comparability. The findings are substantiated through comprehensive robustness checks using alternative measures of CEO overconfidence and comparability, as well as tests for endogeneity. This study further explores the impact of internal and external monitoring on financial statement comparability. The results suggest that in environments with strong external monitoring, the relationship between CEOs overconfidence and financial statement comparability is significantly positive. Conversely, in the context of weak analyst coverage and inside monitoring, CEOs overconfidence positively influences comparability. Regarding the effects of age and gender, this study does not find any significant impact of overconfidence on the comparability of financial statements.

Following a similar analysis and based on upper echelons theory, the third paper explores the relationship between CEO overconfidence and labor investment decisions. Drawing on data from the US market from 1994 to 2021, this study finds that overconfident CEOs tend to make inefficient labor investment decisions. The findings are confirmed through robustness checks using alternative measures of labor investment and endogeneity tests. Further analysis reveals that in young firms, CEO overconfidence leads to inefficient labor investment, and this tendency persists into the CEOs' middle age. Additional tests show that the relationship between CEO power and the firm's R&D investment does not influence the efficiency of labor investment decisions.

Keywords: CEO, Characteristics, Compensation, Overconfidence, Comparability, Labor Investment, Systematic Literature Review, Decision-Making

Table of Contents

Table of Tables

Table of Tables

Table of Figures

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Acknowledgements

First and foremost, I would like to express my sincerest gratitude and warmest thanks to my supervisor, Dr. Qingjing Zhang, who made this work possible. I am grateful for her guidance during my Ph.D. journey. Her support made the challenges of pursuing a Ph.D. less daunting, especially as we navigated the difficult times of the COVID-19 pandemic. Her guidance and advice were invaluable, not only academically, but also in my personal life, throughout every stage of this project.

Secondly, I would like to extend my gratitude to my second supervisor, Dr. Zhuang Zhang, for his insightful guidance and valuable advice. I also want to thank the staff at the business school for providing the necessary workspace and facilities to support my studies.

Finally, I would like to thank my parents for supporting me in every decision I made. It is your selfless love and companionship that has brought me to where I am today. My academic journey has not been smooth, and I have experienced both pride and frustration. However, when I am proud, you celebrate with me, and when I am frustrated, you provide encouragement and advice. Thank you. I love you forever.

Definitions and Abbreviations

2SLS ..... Two-Stage Least Square

Big4 ..... The Biggest Four Audit Firms

CEO ..... Chief Executive Officer

CFO ..... Chief Financial Office

COO ..... Chief Operating Office

FASB ..... Financial Accounting Standards Boards

FE ..... Fixed Effect

GAAP ..... Generally Accepted Accounting Principles

IFRS ..... International Financial Reporting Standards

LIE ..... Labor Investment Efficiency

M&A ..... Mergers and Acquisitions

MTB ..... Market to Book Value

OC ..... Overconfidence

OCF .....Operating Cash Flow

OLS..... Ordinary Least Squares

R&D ..... Research and Development

ROA ..... Return on Asset

SOX ..... Sarbanes-Oxley Act

STD ..... Standard Deviation

TMT ..... Top Management Team

Chapter 1 Introduction

1.1 Theoretical background

Agency theory explores the relationship between the principal (e.g., the owner of a company) and the agent (e.g., the manager or employee) who acts on the principal's behalf (Jensen and Meckling, 1976). This theory elucidates how an agent's incentives can either align with or diverge from those of the principal, giving rise to what is known as the agency problem. It posits that the interests of the principal and agent are not always congruent, with the possibility of the agent acting in a manner contrary to the principal's best interest. Such divergence may stem from differing goals and incentives between the principal and agent or from the agent possessing more information about the company's operations than the principal. To address these discrepancies, the theory suggests various mechanisms, including aligning incentives through performance-based compensation and monitoring the agent's actions. Agency theory is pivotal for understanding the motivations and behaviours of managers and other corporate insiders, offering a framework to craft corporate governance structures that harmonize the interests of shareholders and managers.

The agency problem stems from the fundamental separation of management and finance, often described as the separation of ownership and control. The “empire building” is a substantiated way explain the agency problem which means managers tend to expand the company beyond its optimal size or retain unutilized resources in order to increase personal utility from status, power, pay, and prestige (Jensen, 1986; Stulz, 1990; Titman, Wei and Xie, 2004). Managers seek financier's capital because they either lack sufficient personal funds for investment or desire to liquidate their shares. A paramount concern for financiers is to ensure that their investment does not merely result in a worthless piece of paper once committed (Shleifer and Vishny, 2012). Typically, financiers and managers draft a contract specifying the use of funds and the distribution of proceeds among them. In an ideal scenario, this contract would precisely delineate the manager's responsibilities in all conceivable situations and detail the profit allocation. However, the challenge arises because most future contingencies are unpredictable and difficult to specify, rendering such detailed contracts practically impossible. Despite managers' efforts to raise as much capital as possible by proposing thorough contracts to satisfy financiers, the difficulty of addressing all future contingencies remains. Consequently, managers and financiers are forced to allocate the residual control rights—the authority to make decisions in scenarios not explicitly covered by the contract (Grossman and Hart, 1986; Hart and Moore, 1990).

An effective method to mitigate the agency problem is to offer long-term incentive contracts to managers, aiming to align their interests with those of the investors. The structure of these incentive contracts can vary, including share ownership, stock options, or the threat of termination in the event of poor financial performance (Jensen and Meckling, 1976). The optimal incentive contract is influenced by the managers' risk aversion, the significance of their decisions, and their capacity to invest upfront in cash flow rights (Ross, 1973; Stiglitz, 1975; Mirrlees, 1976; Holmström, 1979, 1982). For instance, when shareholders' wealth increases by $1,000, executive compensation might rise or fall by $3 (Jensen and Murphy, 1990). However, larger incentive contracts can create substantial opportunities for managers to engage in self-dealing, especially when these contracts are negotiated with inadequately motivated boards rather than with major investors. Managers, anticipating a rise in earnings or stock prices, may negotiate such contracts for themselves and even manipulate accounting figures and investment policies to boost their own compensation. This manipulation could involve receiving stock option grants just before the announcement of positive news and delaying such grants until after negative news is disclosed (Yermack, 1997).

Upper echelons theory, introduced by Hambrick and Mason in 1984, posits that the backgrounds of managers shape their cognitive frameworks and values, thereby influencing their strategic decisions. This theory suggests that the characteristics of corporate executives play a pivotal role in determining the nature of strategic choices, which in turn significantly impacts the outcomes of the organization. A key area of focus in strategic leadership research is the influence of the Chief executive officer (CEO) and the top management team (TMT) on organizational processes and outcomes (Finkelstein, Hambrick and Cannella, 2009). The examination of top management teams intersects with various disciplines, including corporate governance (Krause et al., 2015), strategic management (Hambrick and Cannella, 2004), and economics (Hermalin and Weisbach, 1998), highlighting the multidisciplinary interest in how executive attributes affect strategic direction and organizational performance.

Building on upper echelons theory, subsequent researches have consistently find that corporate executives' traits have a profound impact on strategic choice and enterprise performance. Top management team theory, an aspect of organizational management, focuses on the organization's highest leadership echelons. This theory emphasizes that the behaviors and decisions of the top management team are crucial determinants of the organization's overall performance and success. The dynamics within top management teams, including their composition, the nature of their tasks, and the operational context, are significant factors influencing their behavior and decision-making processes.

Since its initial application in the study of general populations, demographic theory has garnered significant interest for its theoretical relevance in organizational research. This approach is rooted in studies that have established connections between demographic characteristics and specific beliefs, values, and abilities. For example, research has demonstrated a negative correlation between age and both the capacity to assimilate new information (Taylor, 1975) and the propensity to make risky decisions (Vroom and Pahl, 1971). This suggests that demographic attributes can serve as proxies for an individual's cognitive foundation, which is shaped by various experiences, including education and background (Hambrick and Mason, 1984). Consequently, demographics have been effectively used as predictors of individuals' beliefs and values (Kahalas and Groves, 1979), indicating their importance in understanding organizational dynamics and leadership.

The essence of human capital theory is the idea that higher levels of human capital led to better performance in specific tasks. According to Becker (1975), human capital is instrumental in acquiring new knowledge and skills, which in turn facilitate the attainment of financial and material resources. Human capital embodies the value created by workers and plays a pivotal role in economic development, as noted by Schultz (1961). Education and training are viewed as investments where costs are incurred upfront, but the returns are manifested later in the form of enhanced productivity and income (Becker, 1964). Remarkably, over the past 70 years, the global proportion of individuals with at least some secondary education has surged from 13% to 51%, while those with some higher educations have increased nearly sevenfold, from 2.2% to 14.6% (Lee and Lee, 2016). Human capital theory has been applied to various management topics, such as the significance of CEO characteristics (Baker and Muller, 2002), team control (Kor, 2006), and labor investment (Zhang et al., 2020). This article aims to leverage data from the American market to examine the impact of human capital on corporate decision-making.

1.2 Research motivations

1.2.1 Overview of corporate governance

Corporate governance mechanisms form an integral part of the economic and legal framework that can be enhanced through political interventions. The ultimate aim of corporate governance is to develop and maintain a business model that serves the interests of all stakeholders over the long term. Some may question the need for immediate governance reforms, arguing that market competition will naturally drive firms to reduce costs. Within this framework of cost minimization, it is suggested that firms should adopt effective corporate

governance mechanisms as a strategy to access external capital at the lowest possible cost (Shleifer and Vishny, 2012). A strong governance framework is essential for the success and accountability of a company's performance, and its absence can lead to significant consequences. In this agent-based model, the purpose of corporate governance mechanisms is primarily to alleviate the conflicts of interest between shareholders and managers (the principal-agent dilemma). This includes the implementation of specific incentive schemes, such as equity-based compensation for executives (Shleifer and Vishny, 1997; La Porta et al., 2000).

Investment decisions made by managers can sometimes prioritize personal interests over those of investors. A notable example from the mid-1980s involves integrated oil producers who spent approximately $20 per barrel on exploring new oil reserves. This preference for maintaining significant oil exploration activities came at the expense of returning profits to shareholders or purchasing proven oil reserves available in the market for about $6 per barrel, indicating a preference for reinvestment over shareholder returns (Jensen, 1986). Additionally, managerial resistance to value-adding acquisitions tends to diminish when top managers have a direct financial stake in the transaction, such as through share ownership or golden parachutes, or when they are more likely to retain their positions (Walking and Long, 1984). In the US, equity blocks trade at a substantial premium over the post-trade price of minority shares, highlighting a special benefit to buyers with potential controlling influence. This phenomenon is further illustrated by studies comparing the prices of stocks that share identical dividend rights but differ in voting rights (Barclay and Holderness, 1989).

The crucial role of management in recognizing developments and events that might influence an organization's present or future strategy serves as a vital link to the external environment, as Margarethe and Bantel highlighted in 1992. Within the strategic decision-making process, the executive team's perceptions and interpretations are shaped by their individual cognitive bases. Prior research has defined a cognitive base as consisting of assumptions about future events, awareness of various alternatives, and the anticipated outcomes of these alternatives. This framework suggests that the strategic choices made by managers are deeply influenced by their personal insights and understanding of the external environment.

1.2.2 Overview of overconfidence

While managers are often presumed to be rational actors, aligning their expectations and actions with their own interests even amid potential conflicts with shareholders. Psychological research indicates that human rationality is inherently flawed. Studies by Alicke

et al. (1995), Fischhoff, Slovic, and Lichtenstein (1977) and Weinstein (1980) provide evidence of this imperfect rationality. A significant concern in corporate governance is the tendency of managers towards 'empire building'. This term refers to managers' efforts to increase their personal gains by expanding their position, power, remuneration and popularity, which can lead to expanding the company beyond its optimal size or hoarding unproductive resources. This issue has been explored in research by Jensen (1986), Stulz (1990), Masulis, Wang, and Xie (2007), and Hope and Thomas (2008), highlighting the divergence between managerial actions and shareholder interests.

Managerial opportunism, manifesting in the expropriation of investor funds or the misallocation of corporate resources, reduces the capital that investors are prepared to commit to a firm in advance. This perspective, highlighted by Williamson (1985) and Grossman and Hart (1986), underscores the depletion of resources due to managers prioritizing personal gain over the firm's interests. Corporate governance thus focuses on instilling discipline among managers—either through self-regulation or investor intervention—to mitigate the effects of post-misallocation. This, in turn, is intended to bolster investor confidence, encouraging them to provide more capital upfront. Despite these governance efforts, outcomes are typically less efficient than in scenarios where managers finance operations with their own capital. A noted negative correlation between capital expenditure and subsequent returns reflects managers' tendency towards empire-building. Interestingly, such behavior was less pronounced during periods characterized by a higher incidence of hostile takeovers, suggesting that the threat of external control can modulate managerial behavior (Titman et al., 2004).

Plous (1993, p. 217) observes that 'Perhaps the most robust finding in the psychology of judgment is that people are overconfident'. Overconfidence is the tendency of individuals to overestimate their abilities, a phenomenon documented by researchers such as Lichtenstein et al. (1982), Oskamp (1965), Alpert and Raiffa (1982), Brown (1988), and Baumeister (1998). These individuals not only feel confident about their estimates, as highlighted by Moore and Healy (2008) and Menkhoff et al. (2006), but also possess a belief in their above-average capabilities (Moore and Healy, 2008). It is important to distinguish between misjudgements, which stem from a lack of knowledge and are easily corrected, and overconfidence, which is a more entrenched cognitive bias identified by researchers like De Bondt and Thaler (1985) and Lichtenstein, Fischhoff, and Phillips (1982).

Overconfidence extends beyond a mere psychological phenomenon, exerting significant influence on practical decision-making. This bias notably affects investment choices (Parker

et al., 2012), financial behaviors (Glaser and Weber, 2007; Statman et al., 2006; Odean, 1998), and stock market dynamics (Xia et al., 2014). Evidence indicates that overconfidence disproportionately impacts experienced managers, rendering them more susceptible to this bias. Such overconfident managers are inclined to undertake excessive risks, leading to outcomes that can either substantially benefit their organizations or culminate in their termination, a factor contributing to their prevalent representation in senior management positions (Goel and Thakor, 2008). Overconfident CEOs, convinced of their company's future success, tend to overestimate the expected cash flows from upcoming projects (Heaton, 2002; Malmendier and Tate, 2005; Roll, 1986). This overconfidence also promotes irrational trading behaviors (Odean, 1998), adversely affecting investor profits. Investors exhibiting overconfidence are prone to active trading, disregarding transaction costs or the potential for negative returns (Odean, 1998).

Johnson and Fowler (2011) posit that self-confidence, up to a certain point, can be a beneficial trait contributing to a firm's success. However, they caution that when self-confidence crosses into overconfidence, it becomes hazardous, potentially leading to crises, scandals, and underperformance within firms, as explored by Ho et al. (2016). The nuanced impacts of confidence on business management have been extensively studied, with research examining its critical role in fostering success, the risks associated with excessive confidence, and the broader implications of these traits for corporate outcomes. This body of work includes contributions from scholars like Billett and Qian (2008) and Malmendier and Tate (2015), among others. Furthermore, the exploration of overconfidence's significance is not confined to the business sector but extends into psychology, underscored by studies such as those by Aghazaden et al. (2018).

1.2.3 The important of financial accounting information and comparability

Financial accounting information, derived from a company's accounting and external reporting systems, is crucial for assessing and disseminating audited quantitative data regarding the financial health and performance of publicly traded companies. It serves as both a direct control mechanism, by furnishing essential data, and an indirect influencer of investment decisions through its impact on stock prices. The primary function of accounting within the framework of corporate governance is to demonstrate how financial accounting data helps to resolve agency problems caused by the separation of managers from external investors. This facilitates the efficient allocation of limited human and financial resources to promising investment opportunities (Bushman and Smith, 2001). Moreover, financial accounting significantly contributes to diminishing information asymmetry between external

investors and management, playing a key role in corporate governance mechanisms. The concept of the 'lemon problem,' introduced by Akerlof (1970), illustrates the difficulties in information exchange between investors and managers, highlighting the necessity for comprehensive financial disclosures by the management.

The value of financial statement comparability has been firmly established through research. De Franco et al. (2011) provide empirical evidence showing that comparability in financial statements allows analysts to obtain higher quality information more cost-effectively. They argued that such comparability enables more meaningful cross-company comparisons, aiding analysts in making more precise assessments of economic similarities and differences among firms. This, in turn, improves their ability to interpret how economic events affect company performance. Additionally, comparability creates a dependable benchmark, facilitating information exchange among companies and simplifying the analysts' task of understanding and evaluating financial statements. Kim et al. (2016) explore the link between financial statement comparability and the risk of stock price crashes, discovering that higher comparability is associated with a lower expected crash risk. This indicates that comparability may discourage managers from withholding negative information, thus reducing investors' perceptions of future firm risk. The emphasis on financial statement comparability has grown over time, as demonstrated by the contributions of researchers such as De Franco et al. (2011), Barth et al. (2012), Kim et al. (2013), Chen et al. (2014), and Zhang et al. (2021).

1.2.4 Overview of labor investment

Labor force investment is recognized as one of the most critical investments for a business, enhancing competitive advantage by cultivating a skilled and productive workforce (Becker, 1962). It represents a unique resource that is difficult for competitors to replicate, thereby promoting the company's value (Merz and Yashiv, 2007). Significant research has been dedicated to examining its impact. For instance, Ben_Nasr and Alshwer (2016) find that higher stock price informativeness, indicative of a greater likelihood of informed trading, correlates with labor investment decisions that closely align with economically justified levels, thus indicating greater labor investment efficiency. In simpler terms, when stock prices reflect more relevant information, the decisions regarding labor investment tend to be more in sync with economic fundamentals, leading to more efficient outcomes. Khedmati et al. (2020) discover that CEOs with strong connections to independent board members tend to have less effective labor investments, especially in industries that demand skilled workers. Furthermore, Jung et al. (2014) demonstrate that utilizing higher quality reports can lead to

more effective labor investment by easing market frictions between managers and external investors.

1.2.5 The interaction between managerial overconfidence and decision-making

Overconfidence significantly influences the decision-making processes of managers. Lai et al. (2017) find that overconfident CEOs tend to prefer full-stock mergers and acquisitions (M&A) as a strategy to assert dominance, despite the inherent risks in volatile environments. Their inclination towards risk stems largely from a belief in their ability to manage uncertainties effectively. Moreover, Chen et al. (2015) discover a negative relationship between overconfidence and the likelihood of adjusting forecasts, indicating that overconfident individuals or groups are less adept at accurately assessing and predicting future events. This shortcoming can negatively affect the strategic allocation of resources essential for achieving desired outcomes, as emphasized by Li and Sullivan (2020).

While other individuals, such as CFOs and COOs, play roles in a firm's decision-making process, their primary function often involves providing suggestions or evidence to the CEO. Ultimately, the CEO makes the final decisions, which include mergers and acquisitions (M&A), investment in innovation, and other strategic moves. Human resources represent a critical area of investment. Previous research has shown that when firms are led by overconfident CEOs, there is a reluctance to revise decisions once made. This can lead to risks associated with human capital investment, such as over-recruiting staff (over-investment) or failing to fill essential positions adequately (under-investment).

For instance, Ho et al. (2016) identify a negative correlation between overconfidence and corporate success, attributing this to the risk-taking behaviors of overconfident managers. The tendency of overly confident decision-makers to pursue higher returns during economic upturns can result in increased instances of bank defaults during downturns. This observation aligns with findings from Eichholtz and Yonder (2015) and Park et al. (2018), who similarly highlight the adverse effects of overconfidence on organizational performance and stability.

Firms with overconfidence managers are subject to more intensive auditing efforts. However, this can be mitigated by reliable accounting information, as Mitra et al. (2019) suggest. Interestingly, in firms with weak audit committees, there is a negative relationship between overconfidence and audit fees. This implies that managers with overconfidence tend to view auditors not as correctives for financial reporting. The presence of a strong audit committee can diminish this effect, according to Duellman et al. (2015). Bouwman et al. (2014) discover that optimistic CEOs prefer to maintain smooth earnings and are less inclined to make

adjustments. This tendency is attributed to a general inclination among CEOs to mask earnings figures, with overconfident CEOs doing so more aggressively, especially during economic downturns. They often overestimate future profits as a compensatory measure.

Kouaib and Jarbour (2016) reveale that managerial overconfidence alters the relationship between revenue thresholds and actual revenue management, particularly in relation to R&D expenditures. Additionally, managerial overconfidence is linked to a decreased likelihood of impairment in any given quarter and extends the duration before goodwill impairment is recognized (Chung and Hribar, 2021). Newly appointed overconfident CEOs are less inclined to acknowledge and write off poor projects overlooked by their predecessors compared to more rational CEOs, as noted by Pierk (2021). This reluctance is rooted in the belief among overconfident managers that auditors do not serve a valuable corrective function in the accounting process.

Majority research emphasis the negative impact of the overconfidence, other provide different views. For example, Owen and Davidson (2009), Williams, Paulhus and Nathanson (2002) show that overconfidence contains the positive influence. It is associated with a positive perception of one's own abilities and those of the company, providing a path to resilience. Research base on the relation between overconfidence and organizational resilience provide a bridge for better understanding the development of organisational resilience and the impact of managing overconfidence on companies. However, one advantage is that overconfident managers tend to enhance forward-looking information disclosures, which are crucial for building bridges with investors (Alqatamin et al., 2017). Beavers and Mobbs (2020) observe a positive correlation between CEO attendance at board meetings and overconfidence, particularly among those serving on nomination or remuneration committees, or as independent directors with regular board attendance. They noted that boards with overconfident directors are more likely to appoint better-prepared and more reputable CEOs following turnover. Owen and Davidson (2009) Owen and Davidson (2009) further emphasize that overconfidence carries a positive dimension, being associated with an optimistic view of one's abilities and the company's prospects, thereby enhancing resilience. This paper aims to enrich the understanding of overconfidence from both financial and human resources perspectives, acknowledging its dual impact on organizational dynamics.

1.3 Research aim and questions

The first paper aims to provide an comprehensive view of existing literature on mangers' characteristics and compensation effect on accounting report. Highlighting the significance of the demographic approach. Pfeffer (1983) mentions the importance of the demographic

approach as follows: demographics are a significant causal variable that affects a multitude of intervening variables and processes, and through the team, influences many organizational outcomes. Specially, it explores how previous studies use theories to explain what kind of characteristics affecting the firm accounting report quality and the impact of these characteristics. It reviews multi-level of factors influence the firm financial statement quality and how these accounting report determinate the mangers professional career. Therefore, the first study aims to answer the main questions as follows:

- Which theories can explain the factors managers' characteristics and compensation on financial statement and the influence of accounting performance on firms' outcomes?
- What characteristics affect the firms' accounting report quality?
- How managers' compensation affects firms' accounting report quality?
- What effects do poor financial statements have on managers?

Data sample: The study employs a variety of keywords and Boolean operators related to manager characteristics and accounting reports to search for and gather research from different databases, such as 'Business Source Premier', 'Scopus', and 'Web of Science'. By meticulously reading through the texts and excluding irrelevant studies, the research team successfully identified 214 articles. These articles span across countries and disciplines—including business, accounting, economics, finance, and management—from the period of 1980 to 2023, and have been published in top-ranked journal articles.

Predicted findings: this study focus on the past studies have done on the area of manger characteristics and compensation on firm accounting report quality. Most important, the result of this research is expected to fill the gap of the past studies and providing the suggestion for the future research agenda and the second and third research.

The second study the primary objectives is to extend top management team theory by examining the impact of CEO overconfidence on corporate financial statements. Specifically, it investigates whether the financial statements of a company remain comparable when the companies' CEOs exhibit overconfidence. From the evidence from empirical and theoretical show that overconfidence has a great influence on the actual investment (Ben-David et al., 2013; Malmendier and Tate, 2005), M&A (Ferris, Jayaraman and Sabherwal, 2013; Malmendier and Tate, 2008), financial decision (Ben-David et al., 2013; Hackbarth, 2008; Malmendier, Tate, and Yan, 2011). Ahmed and Duellman (2013) find the relationship between overconfidence and conservative accounting are negative. This is because overconfidence managers overestimate their ability on investment profit and therefore only prepare to consider potential losses after the delay. "Comparability enables users to identify similarities and differences

between two sets of economic phenomena" (FASB, 2010). This objective is most likely to be met when information can be easily compared with similar information reported by other entities and the same entity at different periods. The underlying notion is that comparability allows users to make clearer inferences about the economic similarities and differences among comparable companies, thereby enabling investors to better understand and evaluate corporate performance (FASB, 2010). The research question are as follows:

- Does an overconfident CEO affect the comparability of financial statements?
- Do internal and external regulations influence CEOs' decisions about comparability?

Data sample: this study by using the US market data from 1994-2021, firm and industry financial data from Compustat database, board of directors' characteristics data form the BoardEx database. The compensation data is got from the ExecuComp. The stock returns data from the CRSP (Centre for Research in Security Prices) merged with Compustat for the security price and return information. Exclude the financial service firms (SIC codes 60-69).

Predicted findings: this study aims to show the empirical evidence of the overconfidence CEOs impact of the firm financial report comparability. Furthermore, beside the this, whether other factors such as the strong or weak regulate role by the outside and inside monitor can affect the financial statement comparability in firm which has overconfidence CEOs.

The third study aims to explore the relationships between overconfidence CEOs and the firm labor investment decision. The third paper is aiming at the whether overconfidence CEOs will lead to the inefficient labour investment efficiency. Previous research find the relationship between overconfidence and firm performance. For example, financial performance (Hayward and Hambrick, 1997; Kolasinski and Li 201; Ho et al., 2016), cash management (Artas et al., 2019), earnings management (Hsieh et al., 2014), tax management (Hsieh et al., 2018), among others. Labor investment is economically significant for modern firms which are often human capital intensive (Zingales, 2000). Therefore, this study focus on the question as follows:

- Do overconfidence CEOs affect corporate labor investment decisions?
- Under what conditions do overconfidence CEOs affect labor investments?

Data sample: the firm and industry level financial data from the Compustat data base. The CEOs compensations and characteristics data from the ExecuComp database. Exclude the financial services firms (SIC codes 60-69). The sample is from 1994-2021 of the US listed firms.

Predicted findings: this study is expected to explore the relationship between CEOs overconfidence and the firm labor investment decisions. Specifically, whether companies

with overconfident CEOs have a negative effect on labor investment. In addition, the study discusses the power and age of the CEO, and whether the maturity of the company influences the workforce decisions of the company.

1.4 Summary of contributions

The first study focus on explores the current paper, compensation and managers' demographic character due to it is an import factors for the firm operate and decision making. to see in what extent the character can influence firm is no matter in corporate using the systematic literature review throw back the current paper about the accounting, business, finance and management and among others. It is essential to analyse in what way the personal character traits of managers and the intensity of their remuneration can influence the running of a company. The first article therefore attempts to analyse where these characteristics and incentives can influence the performance of a company by looking at existing articles. By selecting keywords and specific journals, relevant articles were identified and again the content of the journals was determined by reading the abstracts and profiles. First chapter provide a comprehensive view and clarifies the important of personal characteristics and compensation. By synthesizing a large body of literature, systematic literature reviews provide evidence-based recommendations for future research and practice. The first study provides evidence for the research gap concerning the impact of managerial characteristics and compensation on financial reporting. Specifically, it highlights the theoretical frameworks, types of research, and how managerial characteristics and compensation affect a company's financial statements, as well as the influence of financial statements on managers.

The second chapter explores the relationship between the executive overconfidence and the financial statement comparability. This study finds that CEOs overconfidence is significant positive related to the financial statement comparability. First this study adding the literature of the accounting by document the overconfidence an important individual characteristic of managers can affect firms' financial statement comparability. Therefore, our study expands the existing research on comparability by considering how and why individual characteristics such as overconfidence affect comparability. This study highlights the significant of considering CEOs as economic agents and their characteristics as determinants of comparability. Second, this study contributes to the overconfidence research by examining the role of overconfidence in affecting the corporate decision making on financial statements. Existing research has demonstrated that overconfident CEOs can influence a company's decisions in multiple dimensions. Consistent with this viewpoint, this study finds that the overconfidence of CEOs plays a role in enhancing comparability. We provide evidence that the

impact of CEO overconfidence on comparability is moderated by internal and external monitoring, as comparability necessitates consideration of industry peers. Thus, the effect of CEO overconfidence on comparability depends on the company's internal and external regulatory environment. Thirdly, this study emphasizes the role of CEOs in corporate decision-making. By focusing on another important attribute of accounting information, namely comparability, this paper demonstrates that CEO overconfidence is a significant determinant of financial reporting comparability. Therefore, this article offers new insights into the impact of CEO characteristics on financial reporting practices.

The third chapter expands the literature on the research concerning CEO overconfidence and corporate decision-making. The majority of the literature is based on studies of CEO overconfidence in relation to corporate investments, mergers and acquisitions, or cash holdings. This article extends the research on the impact of CEO overconfidence on corporate governance. It finds that overconfident CEOs can lead to inefficient corporate labor investments. Second, this paper broadens the research on labor investment. The literature indicates that financial reporting quality, comparability of financial reports, executive compensation, connections between CEOs and boards, as well as the influence of analysts and institutional investors, affect labor investment efficiency. This paper provides new evidence that executive overconfidence can lead to inefficient human resource investments, highlighting that management style is also an important factor affecting human capital investment. Third, this research has significant implications for corporate governance. By gaining a deeper understanding of the role of CEO personality traits in corporate decision-making, our findings enable boards and investors to gain a deeper insight into the role of overconfidence in corporate decisions, making wiser decisions when evaluating a company.

1.5 Thesis structure

Overall, this article is structured into five parts, with this chapter providing an overall summary.

Chapter 1 serves as a comprehensive overview, introducing the research background and themes of this paper. It broadens the reader's knowledge by outlining the theoretical foundations and main objectives of the study. It also introduces the research methodology and contributions of this paper.

Chapter 2 presents a systematic literature review. The article synthesizes theoretical and empirical viewpoints on how executive characteristics and compensation affect a company's financial statements, as well as the impact of financial statement performance on executives.

This chapter also offers suggestions for filling the knowledge gaps in the relationship between executive characteristics and company financial reports.

Chapter 3 is an empirical study focusing on the relationship between CEO overconfidence and the comparability of company financial statements. This chapter includes an introduction, literature review, data and methods, and empirical results. It features robustness checks, tests for endogeneity, and additional analyses, concluding with the results.

Chapter 4 is the second empirical study, explores the relationship between CEO overconfidence and company labor investment decisions. Similar to Chapter 3, this chapter includes an introduction, literature review, data processing, and regression analysis, along with tests for endogeneity and robustness.

Chapter 5 presents the final conclusions, discussing the significance of the research, its contributions, and limitations. It also offers suggestions for future developments in this field.

Chapter 2 CEO/CFO characteristics, compensation and financial report quality: a literature review and future research agenda

Abstract

The aim of this systematic literature review is to analysis to what extent the managerial characteristics and compensation influence the financial report quality at the firm level. This review illustrates the managerial demography characteristics (e.g., overconfidence, gender, age, ability, reputation, education, ability, experience, and power), motivation (compensation) and outcome of financial reports. From a theoretical perspective, determinates of financial reports and impact of financial reports, this research finds top managers' demography characteristics and compensation will affect the quality of financial reports, which in turn will force top leaders to resign when financial reports are misreporting and have a certain impact on future job prospects. This review provides a guide for policymaker who intends to strengthen the function of governance aim to improve the financial reporting credibility.

Keywords: CEOs, CFOs, Characteristics, Compensation, Financial Reports Quality

2.1 Introduction

Upper echelons theory suggests that managers' experiences associated with their special personal values and characteristics, and in turn, will affect the results of their management style and lead to a different outcome of organizations (Hambrick and Mason, 1984). Top managers have demography significant influence on the corporate decision, enterprise heterogeneity in investment, financial and organizational practices can be largely explained by managers to the existence of the fixed effects (Bernard and Schoar, 2003). The appointment of CEOs is in the expectation that they will make informed management decisions to maximize shareholders' value (Armstrong, et al., 2010). Board of directors considers the firm performance as the most important factors decides the appointment of CEOs to make an incentive operating better performance. Managerial compensation contract is aimed to align the interests of shareholders through incentives and a kind of potential mechanism to adjust the interests of the shareholders and managers (Kim, et al., 2011). CEOs are interested in financial statements especially the profit, due to their compensation is a link to the reported earnings. Prior research demonstrated the CEOs' compensation which is link to earnings and stock options can influence the earning manipulation (Dechow, et al., 2010). Although CEOs are not directly responsible for the financial reports, however, their power can push CFOs to involve in fraud and get higher compensation incentive (Feng, et al., 2011), at the meantime, due to their professional background and experience, CFOs have more influence on financial reports (Mian, 2001), so this review analysis the characteristic both CEOs and CFOs.

Murphy and Zimmerman (1993) indicate that the financial reporting system is an effective way to obtaining information and substitute managers. Financial reporting and disclosure are important patterns for managers to convey firm performance and governance to outside investors (Biddle, et al., 2009). The outside directors need timely information to perform their supervisory and advisory responsibility. Timely financial reports help to meet the information demand, especially earnings (Bushman et al, 2004). High-quality financial report improves the investment efficiency through reducing the adverse selection, liquidity risk and information risk (Biddle, et al., 2009) and in the long run, it can reduce the company's downside risks, thereby motivating managers to hold more internal debt (He, 2015). Financial misreporting put companies at high risk of discovery and reputational damage, along with lawsuits and regulatory actions (Ball and Shivakumar 2008). The damage to reputation caused by the low quality of financial reports will attract all external stakeholders to strengthen the review and inquiry, making it difficult for the company to fund or sign contracts for investment and business activities in the future (Karpoff, et al. 2008).

The study of executives is necessary for company performance. First, what characteristics of the company's executives will affect the quality of the company's financial reporting. Secondly, poor financial performance, in turn, impacts senior executives. Thirdly, the challenge lies in theoretically explaining the observed evidence regarding the influence of senior executives' personality traits and compensation on financial statements, and in further enriching the theoretical framework. While there is an abundance of literature on executive personality traits and compensation. However, there is a notable lack of comprehensive and systematic literature that offers a full understanding of the process. This gap serves as the primary motivation for this article.

This paper contributes to the literature in several ways. First, compared with previous articles which only focus on empirical research, this article combines both empirical research and theoretical content. This paper establishes up-to-date and comprehensive systematic literature review on the performance of managers' characteristics and compensation in financial statements. The aim is to explore the full range of characteristics of managers by presenting existing theoretical perspectives (from economics to psychological-sociological) and empirical evidence (various dimensions of CEO personality traits and compensation). The impact of the CEO on the company's financial statements. Specifically, this systematic literature review contributes to the existing knowledge on the theories and the empirical results. We use an in-depth analysis of the variety theories and the empirical evidence during the past few years.

Second, this systematic literature review expands various statistical characteristics and salaries of managers. Previous literature did not analyse the characteristics of managers in such a comprehensive way to affect the quality of corporate financial statements. The significance of this article lies in that, first, the personality traits of managers and their compensation incentives have been a very important research field, and their number has been increasing in recent year. Hence, this literature review provides a full range of evidence from theoretical foundations to empirical tests. Therefore, our article fills the gap in this aspect. Consequently, this systematic literature review contributes to the analysis of managerial characteristics and compensation through the analysis of theoretical and empirical evidence, this paper is conducive to the establishment of a knowledge system on the characteristics of managers and compensations for financial statements. After in-depth analysis of the statistical characteristics and salaries of managers, this paper has a more comprehensive understanding of the potential factors that affect the financial statements. This study has research significance for many places. The personality characteristics of corporate executives and the role of compensation incentives in determining corporate decisions and performance

are very important to stakeholders. Such as employees, shareholders and policy makers. Accordingly, managers can influence the company's decisions, which have become various investment strategies and human resources. From a broader perspective, this study is also relevant for compensation policy makers. For example, after understanding the impact of managers' compensation incentives and personality characteristics on financial statements, policy makers can formulate policies according to the impact of compensation ratios on financial statements, to limit financial fraud. This article provides a benefit to researchers, as it has a long-time span and brings together a large number of studies from this period. It also provides a comprehensive and systematic theory of the existing knowledge about the impact of the characteristics of managers on the company's financial statements and how the reverse effect can be achieved when financial fraud occurs.

Existing important review by Armstrong, et al. (2010) indicates that lack of information transparency between managers and outside directors (caused by information asymmetry) can produce an adverse effect to the board of directors of the company structure. Dechow, et al. (2010) focus on the earnings quality and the role of corporate fundamental in determining changes in the cross-section of earnings quality. Shen (2019) using the systematic way analysis the relationship between the CEO characteristics and firm performance. Bhaskar et al. (2023) focus on the CEO characteristics and corporate social responsibility. Ozer (2023) use the systematic review on the CEO characteristics and corporate political strategy. The primary aims of this literature review is to make a significant contribution to the existing literature by adding the question raised above by an up-to-date and comprehensive systematic way of existing studies on managers' characteristics and the compensation. This review is focused on how top managers' demography characteristics and motivation effect on the financial report quality, provide a comprehensive view. Moreover, this review clarifies the importance of using CEO/CFO characteristics as an important determinant of financial reporting results. It covers most of the manager's characteristics. In additon, this review shed the light to the regulation department and policymaker who is interested in the function of financial reports. The policy structure design should consider the executives' characteristics.

Following Hambrick and Mason (1984) the analysis of top management characteristics is mainly used the observable factors (e.g., age, education, experiences, gender) and function background as agents of potential cognitive orientation and knowledge base. The structure of this review as follows, Section 2 will introduce the process of analysis, which includes the searching method, scope and result analysis. Section 3 starts from the theory perspective analysis of the basic theory of research. Section 4 from determinate perspective analyses the relationship between CEO/CFO characteristics and financial reports quality. Section 5

explains how financial reports quality effect the managers. Section 6 is the conclusion and section 7 put forward the research gaps found through this article, and how to conduct future research.

2.2 Literature review

2.2.1 Search process

The systematic review is mainly used in medical research due to the rigor of the methodology which provides reference standard of comprehensive medical care evidence (Moher, et al, 2015). Following the paper by Lopez-Duarte et al (2015), the method structure of this paper is as follows:

First, choose the website of the research area which includes Web of Science, Scopus, and Business Source Premier, set up the keywords and input the research questions.

Keywords: *CEO, CFO, "chief financial officer", "chief executive officer", managerial, "top management team", executive, managerial, "accounting information", "financial report", earnings, fraud, manipulation, restatement, misstatement, comparability, accruals, misreporting, readability*.

Due to aim of this review is to present an up-to-date view on the relationship between managers' characteristics, compensation and financial reports quality, so this research point out 3 questions:

1): Whether top managers' characteristics can influence financial reports quality?

2): What kind of managers' characteristics can impact financial reports quality?

3): Whether managers' compensation incentive can influence financial reports quality?

The journals selection based on four points followed by Lopez-Duarte, et al. (2015)

The period time: this review is from 1980-2023, which through the catchable article over the website.

The language: in this article language is chosen by English, and the full-length article.

Type of article: the area include business, accounting, finance, economics, management.

Journal selecting: the choice of journals is followed by ABS rank list which select world-leading 4-star journals and limited number of 3-star journals as follows:

Journal of Finance, Journal of Management, Journal of Financial Economics, Academy of Management Journal, Academy of Management Review, Accounting Review, Journal of Accounting and Economics, Journal of Accounting Research, Journal of Management, Review of Financial Studies, Contemporary Accounting Research, Journal of Corporate Finance, Journal of Management Studies, Review of Accounting Studies, Review of Finance, Journal of Political Economy, Accounting Horizons, Quarterly Journal of Economics, Quarterly Journal of Finance, Management Science, Journal of Finance, American Economics Review, British Journal of Management

First round types of the keywords into the website, the initial papers are 22318 in Web of Science, 77223 in Business Source Premier and 222265 in Scope. Second round refine the detail searching area into management, economics, accounting, finance etc. and make sure the academic journals in English language the number of papers is 3863 in Web of Science, 12593 in Business Source Primer and 11485 in Scope. The third round is refining the articles follow the ABS rank list select 4-star journals and limited 3-star journals, the number of papers is 574 in Web of Science, 2226 in Business Source Premier and 2469 in Scope. The final step is using screen reading through the title, keywords, abstract, some articles need full-text reading to make a selection. There are 260 papers in web of science, 54 papers in business premier and 107 papers in the Scopus. However, these articles have the overlap so after reducing the duplicates there are 214 papers highly related to this research area.

Table 2.1 Analysis of the numbers about papers focusing on different managers' characteristics and compensations.

Disciplines	Number of studies
First round by input keywords	
Web of science	22318
Scopus	222265
Business source premier	77723
Second round by area and language articles.	
Web of science	3863
Scopus	11485
Business source premier	12593
Third round by ABS rank journals	
Web of science	574
Scopus	2469
Business source premier	2226
Fourth using screen reading	
Web of science	260
Scopus	107

Business source premier	54
Finally remove the duplicates	214

The table provides a summary of the main research topics covered in these papers, along with the relationships identified based on the empirical findings. From the table, it is evident that the study of managers' compensation encompasses the most research concerning its relationship with the quality of financial statements, with CEOs and senior management teams being the primary focus. The findings indicate both positive and mixed effects in their relationships, suggesting that managers' compensation influences their financial report qualtiy. Additionally, the table reveals a significant number of studies on changes in managerial personnel, illustrating how poor financial performance can impact a manager's tenure. Moreover, there is considerable research on the effect of managers' overconfidence on the quality of financial reports.

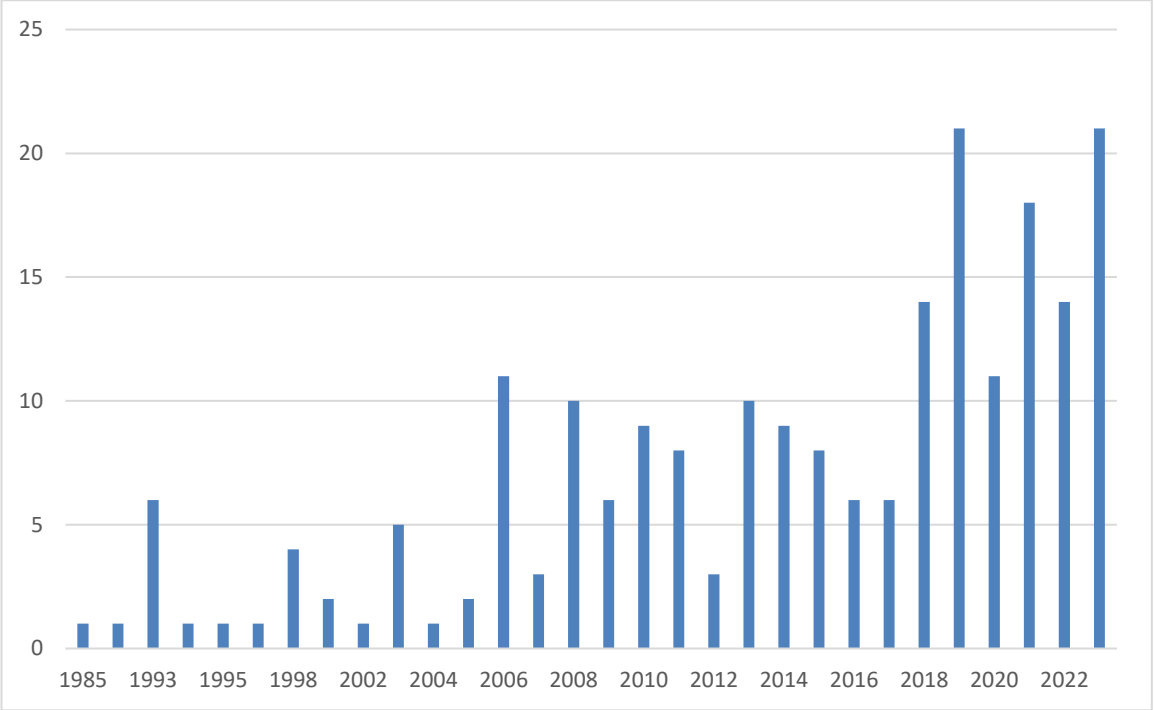
Table 2.2 Analysis the theme and the core finding of the papers

Theme with financial report quality	Relationship	Number
CEO compensation	Positive	39
	Negative	8
CFO compensation	Positive	4
Executive compensation	Positive	33
	Negative	11
	No relation	1
CEO/CFO compensation	Positive	2
CEO overconfidence	Positive	8
	Negative	1
	No relation	1
CFO overconfidence	positive	2
Executive overconfidence	Positive	5
	Negative	2
CEO experience	positive	6
	Negative	4
CEO/CFO experience	Positive	1
CFO experience	both	1
	Negative	1
Executive experience	Positive	4
CEO ability	Positive	4
CFO ability	Negative	1
Executive ability	positive	7
	negative	3
CEO age	Positive	1
CEO power	Positive	4
CFO power	Positive	2
	Negative	2

CEO/CFO power	Positive	3
CFO characteristics	Positive	2
	Negative	1
Executive characteristics	Positive	3
CFO education	Positive	1
CEO turnover	Positive	14
	Negative	1
Executive turnover	Positive	7
	Negative	1
CFO turnover	Positive	2
	Negative	1
CEO/CFO turnover	Negative	1
CEO gender	Positive	3
	No relation	1
CFO gender	Positive	3
Executive gender	Positive	1
CEO style	Negative	1
CFO style	Positive	1
Executive style	Positive	2
CEO tenure	Negative	1
Executive reputation	Positive	3
CEO reputation	Positive	2
	Negative	1

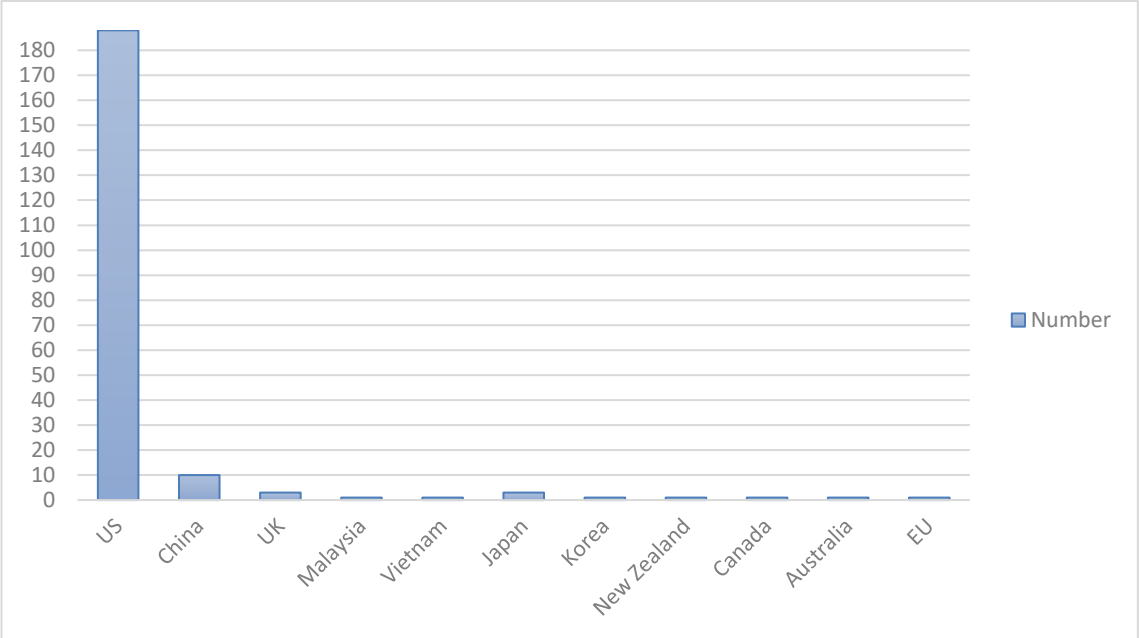
From Figure 2.1, as illustrated in the table, our exploration into the effects of executive personality traits and compensation on financial statements extends back to 1980. However, substantive research in this domain only commenced in 1985, with a marked increase in interest beginning in 2006. Since then, the fascination with this topic has significantly surged. The table clearly indicates that, over the past five years, research delving into the connection between executive characteristics and financial reporting has progressively deepened. Numerous studies in this vein have been published across the disciplines of Accounting and Finance, Corporate Finance, Management, and Economics

Figure 2.1 Figure of publication year



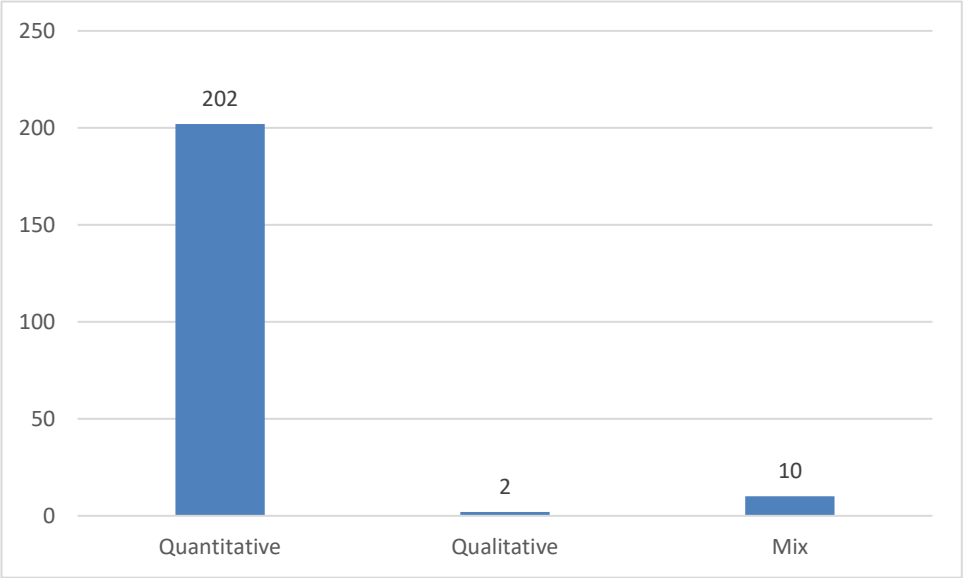
The number of articles on a single country amount to 213, among those the United States accounts for the largest proportion, with 191 articles in total. China is the second largest, while only 10 articles in total. Research on other emerging markets is starting to pick up, but it's still in single digits. This indicates that studies of the US market are still the mainstream of academia.

Figure 2.2 Geographical scope of articles



The number of papers uses quantitative methods are 202, mainly collect data from 4 databases (e.g., ExecuComp, Compustat, CRSP, SEC website). There are 10 articles using comprehensive methods, first by designing the questionnaire interview directly or by email to firm managers (e.g., chief executive officer, chief financial officer or corporate executives) and then carries on the quantitative analysis according to the data, however, these articles do not involve in too many qualitative research which indicate quantitative method is still the way focus in academic circles.

Figure 2.3 Types of research



2.2.2 Theoretical perspectives

Agency theory: Jensen and Meckling (1976) define a company as a series of contractual relationships between individuals with conflicting goals. Fama (1980) argues that agency conflict derives from the divided the ownership and management. The agency conflict occurs between shareholders and managerial. Although managers are about to share a lot of information with the outside directors (Armstrong et al, 2010), they are unlikely willingness to share the information which may damage their interest. For example, accounting fraud, bad firm performance, poor consumption (Verrechia, 2001). Executives are likely to provide information which is unhelpful to outside director to oversight activities. Low transparency may increase the scope of proxy conflicts between shareholders and managers, thus requiring more external board members to supervise management in an environment of low profitability and timeliness (Bushman et al, 2004). Chief executive officer with higher general management skills can cause higher agency problems, have different incentives to take risks, and have higher retention costs when needed (Mishra, 2014).

Upper Echelons: executive leadership is the fundamental driving force of the development of the organization (Hambrick and Mason, 1984). Wiersema and Bantel (1992) indicate that top management team characteristics and demographics have a predictable function. The theory indicates the strategy, operation, and organization responds to the environment depends to a large extent on the characteristics and context of the top management team. Prior research have demonstrated that CEOs education background, age, gender, experience, ability, reputation, overconfidence can influence financial report quality (e.g. Graham and Harvey 2001, Huang et al. 2012, Ye et al. 2010, Hu and Liu 2015, Desai et al. 2006, Graham et al. 2005, Hillery and Hsu 2011).

Tournaments Theory: A similar feature of the CEO promotion tournament within the organization provides senior managers with incentives to increase the risk of the company. Promotion to the position of chief executive represents money, the bonus is increased compensation, improve the status and benefits at the same time (Kini and Williams, 2012). As with risk-taking incentives (Vega), the functional form of compensation packages based on specific management positions (Guay, 1999, Coles et al. 2006), a similar option for the CEO to promote tournaments can motivate senior managers to increase the risk of results used to evaluate and compare. In the tournament competition, with the highest relative to the output of senior managers often win the tournament, promoted to chief executive officer and won the award for promotion (Kini and William, 2012). Equity-based CFO incentives have an impact on accruals management that has nothing to do with CEO incentives (Jiang, et al. 2010). The risk incentives of CFOs lead to riskier debt maturities and lower accrual management (Chava and Purnanandam, 2010). Kale, et al. (2009) find that higher tournaments incentive help firms make a better performace and boost the firm value. Goel and Thakor (2008) demonstrate larger tournament incentives will lead executives to engage in higher risk-taking to enlarge the probability in the rank of CEO. On average, the pay gap of fraudulent companies is significantly larger than that of non-fraudulent companies which confirm that tournament incentive and participate in fraud tendency of positive correlated. between forecasts. Tournament incentive relative to other determinants of fraud makes economic sense (Haß et al., 2015).

Managerial Power Theory: the top management team power can be defined in four perspectives: structural power (related to the distribution of formal positions within an organization), ownership, expert power, and prestige power (Finkelstein, 1992). The prior article has demonstrated CEOs' power can push CFO to involve in manipulation, during this process, CFOs' compensation incentive does not increase, however, CEOs compensation incentive improved (Feng, et al. 2011), bias the report (Friedman, 2014). Core, et al. (1999) indicate that poor performance firm accompanies with higher CEO compensation, this is due

to CEOs get absolute power. CEOs can arrange higher compensation, new business and charity to the boards' members as a reward. These incentives can make executives who have more power than boards to negotiate a higher compensation contract (Essen, et al., 2012). The CEOs of high-income gap companies use the free accounting costs of options to raise their pay, rather than using their incentive attributes (Vo and Canil, 2019).

Human Capital Theory: Becker (1964) mentioned that investment in education and training can improve the productivity. In the US, both male and female directors have equal levels of education (Peterson and Philpot, 2007). Farag and Mallin (2016) indicate that diverse boards would increase the ability and the quality of management which help the firm solve the environment dependencies. Terjesen, et al. (2009) argue that education, skill and experience structure the individual's cognition and productivity which is further benefit the whole company. Sharader, et al. (1997) employ resource-based theories of competitive advantage to describe human capital as key capital for the company, bring multiple perspectives in order to solve the team problems. Different type of directors or human capital would bring different backgrounds and different experiences to the board.

2.3 Determinates of financial report quality

Managerial characteristic and financial report quality

Waldman et al. (2001) point out that the charm of chief executive officers' leadership is associated with firm performance significantly. The proposed upper echelons theory (Hambrick and Mason, 1984) holds that the personal characteristics of high-level managers will affect their decision-making style. The following will analyze their relationship with financial reports from the perspective of senior officers' statistic features.

2.3.1 CEO/CFO compensation and financial report quality

Based on agency theory (Jensen and Meckling, 1976), on the one hand, compensation plans make managers' wealth consistent with shareholders' interests, on the other hand, they provide incentives for managers to make accounting decisions that maximize their own interests. Healy (1985) demonstrates that in order to get a higher bonus, CEOs engage in earning management. Warfield et al. (1995) find a negative relationship between management shareholding and an absolute value of abnormal accruals. Boschen et al. (2003) find that surprisingly good accounting performance will increase CEO compensation in the short period, however, this relationship reverses in the later years, which indicates that unexpected accounting performance has little effect on cumulative pay. Core et al. (2003) indicate that a

bonus incentive is more useful for the lower lever executive than CEOs. Matsunaga and Park (2001) find when CEO first missing the benchmark, the compensation keeps the same, however, when this happened more than once bonuses will decrease. This result can be described as missing earnings benchmark incremental compensation fines. Armstrong et al. (2010) find that when CEOs get a higher equity incentive, the less accounting fraud happened in firm. Johnson et al. (2009) find managers who insist manipulation have a higher incentive to engage. When corporate fraud is positively correlated with incentives for unrestricted stock holdings and is independent of incentives for unrestricted stocks and non-vested options.

In contrast, Erickson et al. (2005) find controversy evidence with policymaker, that is there is no consistency proof that executives' equity incentive has a relationship with accounting fraud. Cheng and Farber (2008) explore the relationship between options granted and misreporting during the year. However, they cannot find obviously link between risk and options. Harris and Bromiley (2007) find a positive result between CEO's option and accounting restatement but not include annual bonus. The sensitive of chief executive officers' option to stock price is related to the frequency of accounting restatement (Burns and Kedia, 2006; Efendi et al., 2007). Larcker et al. (2007) find the percentage of pay-performance based CEO compensation has positive relationship with abnormal accrual. Although the relationship with equity incentives existed only before SOX, there was a positive correlation between the magnitude of CFO equity incentives and absolute total equity and discretionary accruals, as well as the likelihood of beating analyst forecasts (Jiang et al., 2009). The benefits of manipulating reports using discretionary accruals are more pronounced at companies where the potential total compensation of chief executives is more closely correlated with the value of stock and option holdings. In addition, during years of high yields, chief executives exercised unusually large amounts of options and CEOs and other insiders sold large amounts of stock (Bergstresser and Philippon, 2006).

He (2015) finds CEO inside-debt incentive can increase the financial report quality. Cheng and Warfield (2005) demonstrate that CEO equity-incentive is positively related to meeting analysts earning forecast and earning smooth. O'Connor (2006) find CEOs' compensation is positive related to accounting restatement. Burn and Kedia (2006) find CEO options combinations on the sensitivity of the stock price tend to be a significant positive correlation with misreporting. However, other part compensation (for example, long-term incentive bonus, equity) shown less effect on financial misreporting. Using the accruals and frequency of earnings benchmarks measure the CEO and frequency of earnings benchmarks measure the CEO and CFO incentive, Jiang et al. (2010) demonstrate that CFO equity incentive is more important than CEOs' equity incentive in explaining earnings management. Cassell et al.

(2012) find CEOs who hold large inside debt show a relatively conservative investment and financial policies.

Lobo et al. (2018) find the higher accounting comparability of the firm than peers, the higher likelihood to implement the accounting-based relative performance evaluation (RPE) contract, when CEO's get accounting-based RPE contract is more comparable than contracting firm. Chava and Purnanandam (2010) find both CEOs and CFOs' risk-taking incentive have effect on firm financial policies. Specifically, the improve (reduce) of CEOs' risk-incentive accompany with higher (lower) leverage and lower (higher) cash balance. The improve (reduce) of CFOs' risk-incentive accompany with riskier (safer) debt maturity choice and lower (higher) earning-smoothing through accounting accruals. Armstrong et al. (2013) find the incentive effect of portfolio vega includes the incentive effect of portfolio delta. Specifically, without control for portfolio vega, managers with high deltas seem more prone to misreporting, not because the delta provides them with an incentive to misreport, but because these managers also have high power. Furthermore, their results also show that the impact of vega on misreporting is economically significant and larger than many other determinants factors. Haß et al. (2015) demonstrate that tournament incentives have influence on corporate fraud. Specifically, tournament incentives have impact on managers behavior, the larger pay gap, the more possible to involved in accounting fraud.

2.3.2 CEO/CFO overconfidence and financial report quality

Overconfidence people show self-attribution bias, where they classify the success to their own ability and fail to lack of luck (Gervais and Odean, 2001). Schrand and Zechman (2012) find that overconfidence managers will engagement in fraud. This observation promises is that overconfidence managers underestimate the management of earnings in the future, this will enable them to meet the future prediction in unstable status. Goel and Thakor (2008) indicate that in the firm environment, executives who become CEOs will become overconfidence in the later career experience. Hillery and Hsu (2011) find overconfident managers in the prediction of earnings in the coming quarters will become less accurate. However, Ge et al. (2011) explore the risk opinion and overconfidence, they find limited evidence to demonstrate the relationship between CFO's characteristics and financial reporting choice. Schrand and Zechman (2012) find that overconfidence executives involved in manipulation, the hypothesis for this finding is that overconfidence managers underestimate the need to manage the future earnings which put them in an unstable position to meet future projections.

2.3.3 CEO/CFO ability and financial reporting quality

CEO ability acceptance by the market is a precious asset, due to it is linked to some of the CEO's long-term interests, such as higher future pay, reappointment, and management autonomy (Hermalin and Weisbach, 1998). CEOs who are good at general management in his lifetime will get higher compensation package from firm than CEO who are specialists in the industry Baik et al. (2011) find that the probability and frequency of management earnings forecasts are positively correlated with management talent. Besides, the more accuracy the earning forecast, the reaction of the market is higher. Their findings support the point that managers who are talent can improve the credibility of earnings forecast. Demerjian et al. (2013) focus on managerial perspective, using the four alternative earnings quality measures of restatements, earnings persistence, error in the bad debt provision, and modified accruals quality, they find higher manager ability, higher earning quality. In the early year of CEO service, the frequency of observing overstatement is due to low ability CEO exaggerate earning and lose job within few years due to their manipulation is observed (Desai et al., 2006; Hazarika et al., 2012). Oyer (2008) indicates that when CEOs begin the career, with enough adverse selection, if managers show poor results, they are labeled as "low-ability" managers, and their entire careers are often affected. This means that even bad results are not due to poor management, and that even highly competent CEOs exaggerate earnings to avoid underperformance in early service reports. Florackis and Sainani (2018) base on the CFOs' ability to effect firm outcomes. They find that strong CFOs have the ability to hold less cash due to relatively weak prevention incentives and superior external financing capabilities during periods of financial stress.

2.3.4 CEO/CFO gender and financial report quality

Huang and Kisgen (2013) demonstrate that the percentage of female CEOs in large, listed firms is 2%. Srinidhi et al. (2011) find the larger number of women participate in the corporate board, the higher the quality of earnings. Lara et al. (2017) research based on UK firms find that in high professional area, there is no significant difference between female and male, however, discrimination is an important factor between accounting quality and women directors. Barua et al. (2010) demonstrate that companies in which CFOs are female have lower absolute accrual and lower estimation errors. Huang and Kisgen (2013) find male executives are overconfidence by showing lower earnings forecast and unlikely to use options in advance. In contrast, female executives have greater restrictions on earnings expectations and more likely to use options early. This evidence indicates that compared with women, men in the major business decisions showed relatively excessive confidence.

Faccio et al. (2016) find that firm which is operated by female CEO returns are less volatile, leverage is lower and overall risk exposure is lower. If well-governed companies are unlikely to discriminate and high-quality boards have a positive impact on the quality of financial statements (Armstrong et al., 2014), gender bias may produce a positive link between gender diversity and accounting quality. Addressing biases against women can improve the environment for female board candidates, providing opportunities for non-discriminatory companies to find top talent and positively impacting financial reporting which have a positive impact on the financial report. Moreover, in consideration of women to become directors must overcome obstacles, an obstacle of success can be better prepared, and may than male counterparts (Lara et al., 2017). Brammer et al. (2009) demonstrate that women in the board may influence on the efficiency of the company, thus can improve the company's reputation. Gender diversity boards put more focus on supervision and regulation. Specifically, female board increase the input rate and they have higher attendance rate at board, further improve the attendance rate of male board, more likely to act as the audit, nominating and corporate governance committee supervision position, rather than in the service of the compensation committee, are more likely to let CEO responsible for poor performance (Adams and Ferreira, 2009).

2.3.5 CEO/CFO power and financial report quality

Feng et al. (2011) find that CFO who involve in manipulation has the same compensation incentive compare with non-manipulation CFO, however, in the manipulation firm, CEO get higher compensation incentive and power than compare firm which indicates that CFO participate in accounting fraud is due to obeying CEO power rather than seeking for the personal compensation incentive. Before the period of fraud, CFO are more preferring to leave the position due to refuse to involve in the manipulation. Adams et al. (2005) indicate that more powerful CEOs can exert their will to a greater extent, thereby having a more significant influence on financial reporting compared to CEOs with less power. Efendi et al. (2007) indicate that companies where the CEO also serves as the board chairman are more likely to restate financial statements compared to companies without this dual role.

Beasley (1996) and Dechow et al. (1996) research the accounting fraud and CEO combine role. Armstrong et al. (2010) indicate when CEOs get higher asymmetric information and power, they may engage in accounting fraud. Friedman (2014) design an agency model to explore the relationship between CEO power push on CFO to bia earnings and analysis the diversity result of CFO’s equity incentive influence on the financial report. There are two situations: first is CEO cannot put pressure on CFO, in this case, determinates of reports bias are CFO’s

compensation and cost drivers. When the CEO can exert pressure on the CFO, the CEO must face the cost of adopting this right. Specifically, when CFO pay less effort on the financial report will increase the risk level of CEO incentive contract to some extent. Therefore, CEOs the level of financial report bias is replying on the CEO compensation incentive and his capacity to prevent cost with CFO's less effort. Daily and Johnson (1997) find even in the largest firms, CEO influence the firm performance.

Ferdous et al. (2023) focus on CFO power and find CFO power is positive related to the firm disclosure quality, this situation is stronger when the firms have higher quality of governance monitoring and accounting quality. Collins et al. (2017) find powerful CFOs with shorter pay duration incentives together with higher income, further increase the accrual-based earnings management and real transactions. Baker et al. (2019) explore the CEO and CFO power on accounting performance. They find that before the Sarbanes-Oxley Act (SOX), when CEO has more power, the influence is stronger to the accounting performance. However, after the SOX CFO power have relationship with the real earning management. Conversely, Florackis and Sainani (2021) find firms with powerful CFO are less involve in earnings management than the non-resistant firms.

2.3.6 CEO/CFO reputation and financial report quality

The reputation of the CEO can be considered to be the main stakeholders based on the perception of CEO performance, his or her ability and form a lasting image of the overall value (Francis et al., 2008). Using efficient contracting, rent extraction by Mcchensney (1987) and matching hypotheses examine the relationship between CEO reputation and earning quality, they find a converse result from the higher CEO reputation, the worse earning quality. Malmendier and Tate (2009) indicate that celebrity CEOs underperform in the later period of their career, extracted more compensation; increased the time for the external public and private out of the firm and strengthened earnings management. Both investors and analysts will have a higher expectation for the firms' future develop.

Garrett et al. (2014, p. 1088-1089) find that the employee's trust on managers can influence the quality of financial report, "trust leads to greater availability of accurate information across the organization and quicker identification of potential problems".

Graham et al. (2005) indicate career concern is an important factor to push CEOs engage in earning management. Milnourn (2003) indicates the length of tenure is represent CEO reputation, because long staying in position can survive more retention/firing decisions. After established the reputation of high ability, have a long-term service contract CEOs will be keen

to protect their reputation, so is unlikely to participate in the opportunism behavior. For these CEOs, the benefit of exaggerating earnings may be lower than the associated costs. If the current performance is poor, the market is more likely to attribute it to factors other than the CEO's competence, so the upside of overstating earnings may be small. On the other hand, the market's reaction to excess reporting can cause these CEOs' reputations to plumb (Ali and Zhang, 2015).

2.3.7 CEO/CFO education background and financial report quality

Graham and Harvey (2001) find that CFOs with an MBA degree using more complex valuation techniques compare with CFOs without this degree. Aier et al. (2005) find the relationship between financial expertise and restatement is negative, CFOs who have prior financial experience, MBA degree, and CPA certificate is impossible to restate earnings. Malmendier and Tate (2005) find that CEOs' style and the company's financial policies are related to the MBA degree or other kinds of financial education background. CEO who has technical education background are more sensitive on cash-flow than general background CEO, in contrast, financial background CEO not shown the sensitivity. CFO with a financial professional knowledge (i.e., the professional certification, financial background and experience) may through better judgment, to improve the quality of earnings, and help the CFO to generate more accurate accounting estimates (McNichols, 2002). Barua et al. (2010) use three variables (CPA, MBA, experience) into accruals regression, the result is remain the same, the main research interest female CFO is still negative and it is significant in every regression, including professional and demographic variables. Bamber et al. (2010) indicate that CEO and CFO with an MBA degree have more accurate forecasts, in accordance with concepts related to the education and reporting of senior management (that is, the CEO and CFO).

King et al. (2016) from banking industry perspective find that CEO with an MBA degree has better firm performance, however, an undergraduate degree and Ph.D. degree not shown an obvious effect. In addition, CEOs who graduated from top 20 US universities show a supreme firm performance which indicates the quality of education is a significant factor for firm performance. Chevalier and Ellison (1999) find the relationship between managers' education and mutual performance is positive. They demonstrate that managers who have an IVY league degree have higher risk-adjusted return, in contrast, managers who has MBA IVY league degree earn a higher return almost entirely by shifting to greater systemic risk. Beber and Fabbri (2012) research in the forex market and find CEOs with MBA degrees involved in speculation, because management education tends to be overconfident and more risk-tolerant, but young CEOs tend to be only overconfident.

2.3.8 CEO/CFO age and financial report quality

Older CEOs are preferred risk averse and less aggressive compared with younger CEOs (Hambrick and Mason, 1984). Due to the job concern, younger CEO may not involve in the damage future earnings, so they avoid involve in high-risk activities. Along with age is a series of changes in psychological and physiological and further influence the acquisition character of CEOs (Yim, 2013). Bertrand and Mullainathan (2003) indicate senior executives tend to a quiet life. These preferences may increase with age. As age increases, energy levels decrease (Roberts and Rosenberg, 2006). Huang et al. (2012) indicate that when people's age grows, their decision ability increases as well. CEOs' age shows a negative relationship between earnings fraud. Serfling (2014) indicates CEOs' age is a source of their inherent risk appetite for risk -taking. In addition, the concept of age affect behavior can also be applied to other environments that CFO age will effect on their choice of accounting and the method of board members use their monitor function.

2.3.9 CEO/CFO experience and financial report quality

Hambrick (2007) indicates that executives' experience, values, characteristics can explain their understanding of the situation they face and further influence their decision-making. Managers give them what they have in their careers as part of their cognition and emotion. The role of a given condition is to filter and distort the decision maker's perception of the particular situation and how it should be handled. Therefore, professional experience has a significant impact on the type of action managers take. CEOs who have diversity working experience can bring not only professional experience but also social relationships (Geletkanycz and Boyd, 2011). Hu and Liu (2015) based on Chinese firms using hand collect data find that companies which CEOs has diversity working experience show the lower-level sensitivity to investment cash flows and use more external capital, including banking loans and trade credits. This demonstrates that CEOs' professional experience is an important factor for corporate investment and financing decision. Financial expert CEOs are easier in firms' financial policies, including the replacement of CFO (Custodio and Metzger, 2014).

2.4 Impact of the financial report: financial report quality and CEO/CFO turnover

Due to agency theory, as the agent of the shareholder (principal), the manager is expected to use the funds of the shareholders in the most effective way. However, due to different ability of managers, this cannot involve in all managers, Effective management of the labor market

ensures that people who perform poorly are punished. Ending threats can motivate managers to recognize the spirit of maximizing shareholder value. Prior research more focus on the stretegy and leadership perspective (e.g., Hermalin and Weisbach, 1998) to discuss the relationship between CEO turnover and firm performance, this review will focus on firm financial report qualtiy aspect.

Companies that CEOs are submitted significant financial restatements are found to be more than twice as likely to exit the company as their counterparts in the matching sample. (Arthaud-Day et al, 2006). Menon and William (2008) find that following the quit of the auditor, the turnover of CEO increase as well. Auditor resignations provide stronger reasons for directors to replace chief executive officers, as they may indicate that management is unable to deal with reporting issues raised by auditors. Hennes, Leone and Milller (2006) find that failed to distinguish between the abnormal (intentional misstatement) and earning restatement (unintentional misstatement) will lead to incorrect inference. They prove that when the restatement is defined as abnormal rather than error, the turnover of the CEO will be higher. Feng et al. (2011) find that nearly 60% of CFO who are employed by the manipulation firm will face punishment by SEC and further influence their future job choice. Karpoff et al. (2008) demonstrate a convincing proof that almost all the managers who proved guilty lost their jobs. The punished managers also suffered huge financial losses due to restrictions on future employment, restrictions on the company's shareholding, and fines from the US Securities and Exchange Commission (SEC).

In contrast, Agrawal et al. (1999) find that the CEO turnover is no difference for the firm which engage the financial report fraud in the 103 sample firms. Enforcement actions by the United States securities and exchange commission, compared with the non-offending subsample, CEO turnover was not significantly increased (Beneish, 1999). In addition, Persons (2006) finds that CEO's turnover rate is not influenced by the fraud activities. However, limited research based on whether the poor quality itself or worried about quality push the turnover. Besides, this poor earnings quality can be seen as extreme cases not the explain whether CEO involve in fraud within the GAAP (Generally Accepted Accounting Principles) and lose job (Dechow et al., 2010) Geiger and North (2006) find the CFOs turnover has influence with discretionary accruals and firm's financial report results. Desai et al. (2006) find the relationship between restatement and management turnover. 60% of top managers will leave the firm in the 24 months after restatement compares with 35% year-size-industry-matched counterparty and the managers will experience a bad future employment. This indicates that the corporate board and labor market impose a strict rule for financial reporting. The historical of accounting earning properties make it useful in turnover decisions, since the stock price reflects both the

market expectations of CEO of continuous employment, also reflects his or her substitute the desired effect, only the former helps to motivate the CEO (Hermalin and Weisbach, 1998).

2.5 Conclusion

This paper aims to provide an up-to-date investigate between top managers' characteristics, compensation and financial reports quality in order to have a more complete understanding the managers' characteristics impact on the firm financial report quality aiming to investigate about the determinates of financial reports quality, and the impact of the financial report with CEO/CFO turnover and theoretically understand the mangers' characteristics and incentive motivation. This review covers the time period from 1980 to 2023. This systematic review contributes the literature in many ways. After summarising from all characteristics and compensation with financial report quality and their influence on managers' career concentrated on both empirical and theoretical studies, from basic theory, determinates and impact. Summarising the determine related to all aspects of the CEOs and CFOs' demographic characteristics and their compensation, we find managers' characteristics and the compensation have the influence on firms' financial report quality. Meanwhile, the presentation of financial statements will also have an impact on the career development of managers. This research review of the empirical study shows that poor financial reporting and the relationship between CEOs turnover is not conclusive. Some research has demonstrated that poor quality financial report will lead to a higher rate of executives' turnover, in contrast, others do not find an obvious proof. Whether report poor-quality or poor quality related cognitive drive the positive correlation still needs to discuss.

Second, although SOX states that both the CEO and CFO are responsible for the financial statements, the relationship between the quality of financial reports and the chief replacement is not absolute, which may be due to the more cautious decision-making of the CEOs and the strict supervision of the board of directors over the executive team. Finally, this research reviews about the impact of CEO/CFO features to financial report quality documents, found some promising future research directions, though as a result of the measurement management features a reliable proxy, the results need to be a careful explanation. The analysis the theories in the field which involve in the research, help to better understanding the current and future studies. Besides the CEO we add the CFO who is also important for the firm's important decision-making member and they are directly responsible for the financial statements.

Although this article may offer insights into current research and future knowledge, it still has some limitations. The limitation of this review is as follows: First, the selected journals are all based on the top journals ranked by ABS. Majority journals are focus on ABS rank 3 star or above. Although the opinions and methods of some journals are highly related to the topic which am interested in, due to the rank of journals, these articles are not within the scope of this review. Based on high-quality research, the selection scope of journals will be expanded in the future. Second, this literature review is full text published in journals, so working papers and conference papers are not included. Some high-quality working papers will be referred to in future studies. Last, most of the data in the literature review are from listed companies in the United States, such as S&P1500. Cross-country research and emerging region research are limited. European countries analysis is not extensive.

Chapter 3 CEO overconfidence and financial statement comparability

Abstract

This article provides empirical evidence on the relationship between CEO overconfidence and the comparability of financial statements. This research finds that overconfident CEOs have a positive impact on the comparability of financial statements. Further research reveals that both internal and external monitoring affect financial statement comparability. Specifically, for external regulation, the impact of CEOs on the comparability of financial statements is more pronounced in companies audited by Big4 auditing firms. For financial analysts, overconfident CEOs have a greater impact on the comparability of financial statements in companies with weaker analyst coverage. Regarding internal governance, companies with weak boards of directors' overconfidence CEOs show a greater impact of on financial statement comparability. In terms of demographic characteristics of CEOs, this study does not find an impact of CEOs on financial statement comparability. Overall, the results are consistent with predictions, indicating that overconfidence CEOs affect the comparability of financial statements. Due to the personality trait of overconfidence, CEOs are more inclined to adopt comparable financial reports.

Keywords: CEO Overconfidence, Comparability of Financial Statements, Executive Personality Characteristics, Upper Echelons Theory

3.1 Introduction

Upper echelons theory posits that the personal characteristics of managers significantly influence their interpretation of the situations they encounter, which in turn affects their decision-making processes and ultimately has an impact on firm outcomes and strategies (Hambrick and Mason, 1984; Boeker, 1997). In recent years, there has been a notable increase in research focusing on the top management team, with overconfidence emerging as a pivotal topic of investigation. Past studies have demonstrated that CEOs overconfidence influence various facets of firm operations, including investment in innovation (Hirshleifer et al., 2012; Richardson, 2006), firm performance (Malmendier and Tate, 2005; Libby and Rennekamp, 2012; Malmendier et al., 2011), the quality of financial reporting (Goel and Thakor, 2008; Hsieh et al., 2018), activities related to mergers and acquisitions (Billett and Qian, 2008; Malmendier and Tate, 2008; Ahmed and Duellman, 2012), crash risk (Kim et al., 2016), the structure of compensation (Gervais et al., 2011; Humphery-Jenner et al., 2016), tax avoidance by overconfident CEOs and CFOs (Hsieh et al., 2018), and cash holdings (Chen et al., 2020).

The aim of financial reporting is to provide useful information to investors, including details on the amount, timing, and uncertainty of future net cash inflows to the entity (FASB, 2010). Achieving comparability is in line with FASB's goals, and efforts to enhance the comparability of accounting standards internationally commenced in 2000. It is posited that comparable standards contribute to a more efficient international capital market and reduce costs for both producers and users of financial statements (FASB, 2010). Prior research has predominantly concentrated on the impact of the mandatory implementation of International Financial Reporting Standards (IFRS) on the comparability of financial statements (Barth et al., 2012; Li, 2010; Beatty et al., 2013; Chen et al., 2013, DeFond et al., 2011). De Franco et al. (2011) are pioneer in employing empirical tests at the firm level, demonstrating that comparability could enhance the precision of analyst forecasts, which spurred further investigations into comparability. Subsequent studies have revealed that financial comparability can improve analysts' forecast accuracy (De Franco et al., 2011), reduce firm risk (Kim et al., 2013), better the information environment for external investors (De Franco et al., 2011), and affect acquisition decisions (Chen et al., 2018). Francis et al. (2014) delve into the auditor style and comparability, marking the inaugural study on the influence of auditors on the comparability of financial reporting. Nonetheless, the interaction between other variables and comparability remains an open question. This research aims to explore the effect of managerial overconfidence on the comparability of financial reporting.

Overconfident managers believe they surpass the average, a trait that significantly influences their decision-making, corporate policies, and financial reporting choices (Goel and Thakor, 2008). Thus, overconfident managers affect not only internal governance within the firm but also impact external investors. Prior research has shown that overconfident CEOs are inclined to widen the gap between actual earnings and earnings forecasts to align with their expectations and fulfill their overconfident tendencies (Hsieh et al., 2014). They tend to overestimate the returns on their investments, misinterpret projects with a negative net present value as value-creating, and often dismiss or rationalize personally observed negative feedback (Kim et al., 2016).

However, the primary function of accounting comparability is to aid investors in discerning similarities and differences between peer firms, enabling them to obtain comparable information and assess whether a firm is withholding adverse news (De Franco et al., 2011). This function is seen as crucial not only for investors to enhance investment efficiency but also for external monitors to regulate managers' behavior. With more comparable financial statements, investors can more easily compare peer firms, thereby increasing investment efficiency. For external auditors and analysts, enhanced comparability of financial statements improves the information environment and report quality (De Franco et al., 2011), which in turn bolsters their monitoring role and the accuracy of forecasts. Comparability also enhances the efficiency of internal governance, as boards can use financial statements to regulate managerial behavior. Therefore, this paper posits that a CEO's overconfidence can impact accounting comparability. Focusing on the overconfidence of CEOs due to their critical role within the firm.

A very important link between investment level and cash flow is the different between CEOs and market. The measure of overconfidence follows Malmendier and Tate (2005), which is Holde67 based on options, CEOs receive options and grants as part of their compensation, with restrictions against trading or short-selling. The firm's performance is linked to its human capital. There are two methods to identify overconfidence. First, define a benchmark for the minimum percentage of the real price at which the CEO should exercise the option in a given year after the authorization period ends. This method identifies overconfidence when a CEO is overly optimistic about their ability to increase the stock price and profits from holding the options. Second, overconfidence is indicated when a CEO, believing in the firm's future prospects, holds onto their options until expiration (10 years). Additionally, CEOs who routinely increase their holdings of firm stock are also considered overconfident. Due to lack of the data so using the use alternative way analysis the executive overconfidence by other researcher (e.g., Campell et al., 2011; Hirshlefer et al., 2012).

The measure of comparability follows the method of De Franco et al. (2011), for a given event involving two firms, users can identify their similarity and different by financial report indicate they are comparable. Using the large sample of S&P 1500 between 1994 to 2021, exclude the financial firms. The results find the relationship between CEO overconfidence and financial statement comparability are positive and significant. This meets our hypothesis regarding the relationship between CEO overconfidence and comparability. After conducting robustness and endogeneity tests, the results remained significant and consistent with our primary regression analysis. As the results show the positive relationship between the CEO overconfidence and financial statement comparability, further analysis involves channel tests exploring the effects of CEO overconfidence in various environment and under different characteristics. In the strict audit firms, overconfidence CEOs show the significant positive relationship. For the weak analyst coverage firms, overconfidence CEOs show the significant and positive influence on the financial statement comparability. This indicates that within the strong outside monitor, overconfidence CEOs are more willing to use the comparable accounting report. However, for the analyst forecast, the influence of CEOs on the financial statement comparability is strong in the weak analyst coverage firms. For the inside governance, the results show that in the weak board control CEOs are having influence on the comparable financial statements. Further explore whether CEO overconfidence will influence by their personal characteristics: age and the gender. By putting these variables together and cannot find any significant relationship between CEOs overconfidence and financial statement comparability. This indicates personal characteristic cannot influence the decision for the financial reports.

The existing paper on CEO overconfidence and financial statement comparability by Almaleki et al. (2021) focuses on emerging markets (Iran and Iraq), whereas this paper concentrates on the US market. Additionally, their study spans from 2012 to 2018, while this paper covers a longer period from 1994 to 2021. The methodology for measuring overconfidence also differs. This paper utilizes stock options as a measure of overconfidence, whereas Almaleki et al. (2021) base their analysis on asset growth, without conducting further tests for endogeneity and robustness. This research attempts to incorporate all potential influencing factors regarding the relationship between overconfidence and financial statement comparability. This paper contributes the literature in the following parts: first, to the best of current understanding, this is the first paper explore the relationship between overconfidence and financial comparability of the US market. This paper adds the literature on the financial statement comparability. The finding of this research confirms that except accounting statndards (Barth et al., 2012), audit style (Francis et al. 2014), audit committee (Endrawes et

al., 2018), executives personal characteristic can be important factors influence accounting report comparability.

Second, this article supplements the role of overconfidence in corporate decision-making, especially the role of corporate accounting policies. Previous research has demonstrated that overconfidence behaviour can influencet on corporate in investment decision (Malmendier and Tate, 2005), innovation (Hirshleifer et al., 2012), financial misreporting (Schrand and Zechman, 2012), stock crash risk (Kim et al., 2016). This research adds the literature on the managers' overconfidence behaviour also effect on corporate financial statement comparability.

Finally, this research bridges the gap between psychologically-driven managerial behavior and rationally-based managerial behavior in corporate decision-making. This paper investigates whether the accounting practices of companies led by overconfident CEOs are influenced by changes in internal and external monitoring, as well as by individual characteristics. While previous studies have highlighted that overconfident CEOs can affect corporate investments and lead to misreporting of accounting information, this research discoveres that overconfident CEOs are more likely to produce comparable financial statements, emphasizing the importance of comparability.

The structure of this essay is as follows, section 2 reviews the current literature on executive overconfidence and financial comparability. Section 3 and 4 presents the data and variables, methodology and descriptive statistic. Section 5 describes the main empirical analysis about confidence and comparability. Robust tests are presented at section 6 and additional endogeneity test are at section 7. Section 8 is the additional test considering other potential factors. Section 9 is the conclusion of this paper.

3.2 Literature review and hypotheses development

3.2.1 Managerial overconfidence and financial report quality

Overconfidence refers to the tendency of individuals to overestimate the accuracy of their knowledge, abilities, and information, leading to expectations of more favorable outcomes than those suggested by a realistic assessment (Bhandari and Deaves, 2006). Individuals tend to overestimate their personal abilities, perceiving themselves as better than average, a phenomenon known as the "better-than-average effect" (Alicke et al., 1995). Justified confidence and overconfidence are often difficult to distinguish because both exhibit similar behaviors, and the actual level of task competence remains concealed (Anderson and Kilduff

2009; Campbell et al., 2004). Anderson et al. (2012) discover that individuals displaying overconfidence within groups tend to obtain high social status or respect and exert significant impacts. This effect is not justified by actual ability, as individuals' confidence does not align with their true capabilities. This finding supports the status-enhancement theory of overconfidence, which proposes that overconfidence is prevalent in human self-judgment because it contributes to an individual's attainment of higher social status. Overconfident CEOs tend to overestimate their abilities and the likelihood of achieving favorable and rewarding performance outcomes, particularly concerning their bonuses and professional reputation (Gilson, 1989). Optimistic managers often misinterpret projects with negative net present value (NPV) as positive, leading to overinvestment and engaging in more mergers and acquisitions (M&A) activities, which can ultimately destroy value by overestimating their abilities and the future returns of the firm (Malmendier and Tate, 2005). Further evidence indicates that overconfidence also distorts a firm's financial policy (Malmendier et al., 2011). Overconfident CEOs are overly optimistic about the firm's future and overstate their contributions, resulting in negative financial performance (Libby and Rennekamp, 2012). Overconfidence is more prevalent among CEOs compared to other executives, and they are more likely to become CEOs when competing with rational managers (Goel and Thakor, 2008).

Overconfident CEOs are more likely to be involved in financial misstatements when actual performance does not meet their expectations (Schrand and Zechman, 2012), and they require more cash flow to support their investment needs and innovation research (Richardson, 2006). Narcissistic CEOs are more prone to engage in tax avoidance behavior, as they are associated with lower interest rates (Olsen and Stekelberg, 2015). Overconfident CEOs exhibit a negative relationship with accounting conservatism, a situation that external regulations cannot mitigate (Ahmed and Duellman, 2012). Zheng (2012) compare the impact of CEO and CFO overconfidence on firms' financial outcomes, find that overconfident CFOs play a more crucial role than CEOs in financial decision-making, such as debt and equity financing. Overconfidence can affect managers' earnings forecasting accuracy, overconfident managers who achieve short-term earnings forecast success may not perform as well later, focusing more on their personal beliefs and less on public sources (Hilary and Hsu, 2011). Hsieh et al. (2018) compare CEO and CFO overconfidence, find that firms engage more in tax avoidance when both CEOs and CFOs are overconfident (compared to other top management team combinations).

3.2.2 The fundamental and benefits of accounting comparability

Accounting information is design to measure and disclosure about the financial position and performance of listed companies audited quantitative data and provides direct and indirect input for corporate governance mechanism. The basic objective of accounting governance research is to provide evidence of the extent to which the information provided by financial accounting systems alleviates agency problems resulting from the separation of managers and outside investors, thereby facilitating the effective flow of scarce human and financial capital to promising investment opportunities. Moreover, accounting information help investor lower risk premium through indirectly way, to compensate for the loss of the confiscated by chance regulators and cause of risk (Bushman and Smith, 2001). The aim of the financial reporting is to provide information to users, in order to help them to evaluate the amount, timing and uncertainty of the company's future net cash flow (Kim, et al., 2016).

Comparability is the main reason for design accounting standards and further harmonize the selection and application of accounting methods in economically similar companies and limit the diversity of industry rules in order to promote comparability (FASB, 1980). “Comparability is the qualitative characteristic that enables users to identify and understand similarities in, and differences among, items. Unlike the other qualitative characteristics, comparability does not relate to a single item. A comparison requires at least two items” (FASB, 2010). Comparability can be defined as the extent to which an enterprise has similar accounting systems, resulting in similar financial statements for a given set of economic events (De Franco et al., 2011). Comparability allows information consumers to compare similar information at the same time between different enterprises, or to compare similar information at different times within the same enterprise (Barth et al., 2013). Higher comparability allows managers to better understand the situations of competitors, the industry, and the economic environment, as well as their impact on the company. This can enhance managers' ability to predict the company's future development. Chen and Gong (2019) find that the financial statement comparability can improve the quality of the financial report. Specifically, the greater comparability help managers better report the accruals which is closely related to the firms’ underlying economics activities. Additionally, it helps enhancing the pricing efficiency of discretionary accruals.

Prior research focus on the fundamental of financial statement comparability, the implement of IFRS (International Financial Reporting Standards) supply the environment for the adoption of IFRS promote the process of comparability, as report as FASB (2016) “the increasing number of countries around the world that have decided to require (or permit) the use of IFRS

has increased the comparability of reporting internationally". Enforce the IFRS can significantly reduce the enterprise cost of capital and one of the most important reasons is that enterprises implement IFRS brings the improvement of accounting information comparability (Li, 2010). Comparability have increased of adoption of IFRS in non-US firm over 20 countries compare with US firm which implement GAAP (Generally Accepted Accounting Principles) and this can be find on earning smooth, accruals quality, earnings timeliness (Barth et al., 2012). The mandatory of IFRS on the cross-section firms show more significant liquidity in the firm which has more comparable with their peers (Neel, 2017). De Fond et al. (2011) study 5460 companies in 14 countries that have mandatory IFRS in 2003-2004 and 2006-2007 and find that the comparability of companies' financial statements increased due to the mandatory use of IFRS and greater foreign investment. Peer enterprises financial information may generate a spillover effect to enterprise's investment decision-making, reduce the uncertainty associated with investment activity (Chen et al., 2013). As the industry leader company overstated revenues during the fraud, its peers also increase their investment (Beatt, et al., 2013). Francis et al. (2014) first from financial agents' perspective explore the relationship between comparability and auditor style. They find same auditor from Big4 agents have more comparability reports than two different auditors, in addition, the comparability level higher in Big4 agents than non-Big4 agents. This is due to Big 4 agents have more complex accounting rules and procedure than normal agents so that form the unique style.

De Franco et al. (2011) first use the empirical evidence on firm level, later researches have proven the function of comparability in many perspective. Comparability on debt can decrease the uncertainty of investors' on the firms credit risk. With the more comparable financial report, analysts' forecast can become more accurate and less dispersed which means comparability can be used by analysts for earnings, help outsider better understand the firm accounting system, operation and environment of the firm (De Franco et al., 2011; Young and Zeng 2015; Sohn, 2016). In the meantime, comparability can improve the environment of analyst and then improve the quality of analysts' forecast and valuation, reduce the uncertainty of investor participant in the credit risk and pricing in the debt market (Kim, et al. 2013), reduce the cost of auditor get the information, test and process as well as increase the efficiency of audit and quality of report (Zhang, 2018). Comparability increases the number of firm-specific information on stock price, help investor forecast the future return of the firm (Choi et al., 2019). Wang et al. (2023) find that gender also have effect on financial statement comparability. Using the sample of China listed firms, they find that female CFOs are make more comparable financial statements than male CFOs. However, this situation disappears when male CFOs dominate the industry.

The reason why comparability is so important is due to its help to achieve the objective of financial report information. Giving the useful information to the investor, lenders and other creditor for decision making for the resources providing. Comparability reduces the cost of acquiring and processing at the same time increase the quality of the financial report (De Franco et al., 2011). Financial report is aimed to give information for those make decision on capital allocation, therefore the comparability in financial report is crucial to those people take more sensible capital arrange decisions. The high quality of financial report provides the investor useful information that is relevant and truly show the economic situation of the firms' activities during the report period and position at the end. The comparability enhanced the quality of the financial report quality. The benefit of comparability not only for outside users but also inside users. Comparability can be used as adjust function for firm internal regulate like boards to compare the effective with their peers. With the comparability, the function of incentive to managers on holding the bad news are decreased which indicate the comparability can help reduce the expected crash risk of the firm (Kim et al., 2016). As comparability increases, firms tend to shift from accrual-based earnings management to real earnings management (Sohn, 2016). For companies that have greater accounting comparability between their industry peers, their stock prices are more effective relative to accrued earnings and windfall earnings (Ahmed et al., 2017).

Firms which have higher comparability tend to provide the relative performance-based compensation contract, this is due to comparability improve the risk-share benefit on accounting-based pay performance (Lobo et al., 2018). When companies have more comparability compare with their peers, the potential acquirers can get more profitable acquisition decision which can be proved by the higher M&A announcement returns, higher acquisition synergies, and better future operating performance. In addition, when the target companies' financial statements are more comparable, the possibility of post-acquisition impairment of goodwill and post-acquisition divestiture is less likely happen. Finally, acquirer can benefit most from comparability when their degree of ex ante asymmetry is high, the acquirer operates in an unstable operating environment, and the management has relatively little understanding of the potential firms. Overall, the comparability of target financial statements helps the acquirer to make better acquisition investment decisions and promote more effective capital allocation (Chen et al., 2018).

3.2.3 Interaction between managerial overconfidence and comparability

Top management team characteristics have important influence on corporate performance (Hambrick and Mason, 1984). Managers are motivated to hide bad news from investors out of

concerns about employment, salary, reputation, etc. (Jin and Myers, 2006). To investigate the relationship between managerial overconfidence and comparability is important because managers can affect firm on many aspects which include investment, financial and organization practice (Bertrand and Schoar, 2003). Managers' decisions are important for firm values, they overestimate firms' future return of investment project (Malmendier and Tate, 2005).

Overconfidence managers overestimate future return of their project and cash flow, misunderstand the negative NPV as firms' profit, ignore the private negative feedback which is opposite with rational managers (Malmendier and Tate, 2005). Overconfidence managers also effect on the efficiency of information sharing on the stock market, this is because they believe short-term investors lack of patience, when they know bad news will lead to pause the project. They may involve in use active accounting accruals and voluntary disclosures to convey to the stock market their (true but flawed) optimism about the company's long-term prospects, holding the bad news (Kim et al., 2015). They believe their project are under control and underestimate the failure of their investment (Malmendier and Tate, 2005). However, Chen et al. (2020) find that overconfidence CEOs have the positive effect on the firms' cash holding. Previous research find overconfidence CEOs are likely for the firms' R&D investment (Galasso and Simcoe, 2011), better innovation and higher return volatility (Hirshleifer et al., 2012). Therefore, when the firms have overconfidence CEOs they may prefer to use more comparable financial statements, due to they have positive view for the firms future.

More comparable financial statements help to reduce the cost of access to information, reduce the information asymmetry, improve the understandability of financial information and decision usefulness (De Franco et al., 2011). Comparable financial statements enhance auditors' efficiency and accuracy due to provide information set, they can better understand the process of economic events into accounting figures. This enhanced knowledge set helps auditors validate client accounting results and thus improve audit quality. More comparable financial statements also perfect the targets firms' information environment which is easier to design the audit plan and analysis the risk (Zhang, 2018). Through the comparable financial statements, investor can understand the efficiency of the firm performance (Kim et al., 2016), it helps to improve the accuracy of the valuation based on the analysis of the company's business (Young and Zeng, 2015). So, we estimate the relationship between comparability and managerial overconfidence is negative.

This research focus on managerial overconfidence influence on financial statement comparability. Individuals are more influence by interpretational bias (or other positive

overestimate) compare with prior half (Taylor and Gollwitzer, 1995). Top management team behaviour has important influence on firms' performance and decision making, which also include accounting report so those managers who are overconfidence will overestimate their ability and firms' future return, they prefer to allocate more resources on the investment project or M&A (Malendier and Tate, 2005), and these activities contains more financial resources to meet managers' earning expectation (Richardson, 2006).

For external investors, one of most important characteristics of financial statement comparability is help the investors understand the same and difference between firms and their peers (De Franco et al., 2011), efficiency of the investment can be largely improved. Investors can monitor managers' behaviour based on reports from one company to another, curbing the hoarding of bad news. This study examines whether overconfident CEOs will actively implement more comparable financial statements for investor scrutiny. This research assumption that due to managers is blindly confident in their abilities, they are willing to implement more comparable financial statements in the company. Therefore, external investors are able to obtain such transparent information and may judge the company's future development because of the comparable of information and to know how the economics events become accounting report. Although the negative effects of management optimism (or overconfidence) can be mitigated by introducing an external perspective (Heaton, 2002).

For external monitors (for example, auditors, analysts), comparability can increase the information environment and reduce the cost of assessing the information, since obtaining the high quality of information, the regulator according to the actual situation of the company will be more accurate for the forecast of future risks. When overconfidence executives improve the accounting comparability, the cost for getting the information will decrease and accuracy of the forecast will increase, the external role of monitor will decrease as well. Whether external regulation can release the overconfidence can be seen as an open empirical question (Ahmed and Duellman, 2012).

For the internal regulators, more comparable financial report help board regulate the mangers' behaviour. With the more comparable financial statement, less managers will less involved in the earnings management to cover their own interest (Sohn, 2016). Due to the overconfidence managers put more resources to fulfil their own interest, they believe they are better than others so they are willing to use the comparable statements, the boards can get compare with peers firms may reduce a certain degree of waste of resources and play better role on regulate management team. The overconfidence behaviour of executives will have an impact on the company in various aspects, including the comparability of financial statements. The

ineffective supervision of the board of directors may mean that failed to guard against management opportunism, which cause the distortion of the corporate investment (Fracassi and Tate, 2012).

Previous research findings indicate that the CEOs play a crucial role in the company's decision-making. CEOs take more informed decisions regarding investments and financing. Financial statement comparability able to accurately compare their firm's financial performance with their competitors and identify the strength and weakness. Investors more likely to investment in the firms which has more comparable financial statements. This is due to comparability makes it easier for investors to obtain the firm's financial health and future prospects and potentially increasing investment. For the regulator financial statement comparability Previous literature also indicates that the comparability of financial statements is related to the quality of accounting standards, the strength of enforcement mechanisms, and the incentives for managerial reporting compliance (Francis et al., 2014; Fang et al., 2015; Imhof et al., 2022).

Following De Franco et al. (2011), this paper focus on financial statement comparability at the industry level, which represent the average level of the firms in the industry, min the noise when have a decision making and more visible. Comparable financial report enhances investor confidence by making it easier to evaluate a firms' performance compare with peers. CEOs are keenly aware that positive market perceptions can lead to higher stock prices and better terms for financing. Moreover, financial statement comparability allows CEOs to bench mark their firms' performance against competitors. This is crucial for strategic decision-making, resource allocation, and identifying areas of improvement. Ensuring comparability is also important for the firm in case of meet the regulatory penalties and goodwill. Make sure company follow the legal standards and good corporate governance. The CEO's role in ensuring financial statement comparability is multifaceted. Firstly, the CEO is instrumental in guiding the finance team to comply with the accounting standards specific to their industry, thereby facilitating the effective implementation of comparability. This involves the development of a robust system for producing high-quality accounting reports. Given that the CEO is the primary decision-maker within the company, their leadership is crucial in adopting high-quality financial reporting systems that guarantee both the quality and comparability of financial disclosures.

Moreover, the CEO is responsible for promoting high-quality training for financial personnel and their continuous professional development. This ensures that the team remains current with the latest accounting standards, which is vital for maintaining the comparability of

financial statements. Additionally, the CEO can engage external auditors to work alongside the company's financial staff, further enhancing the comparability of financial reports. For investors, the CEO's commitment to timely and transparent disclosure of company information facilitates easier access to industry-specific data. These efforts underscore the CEO's dedication to both the company's informational transparency and investor relations. Such initiatives are essential for regulatory compliance, successful mergers and acquisitions, and the overall trustworthiness of financial information. Through these interventions, the CEO ensures that the company's financial statements are not only accurate but also comparable with those of industry peers.

Hypothesis:

CEOs overconfidence has an impact on financial statement comparability.

CEOs are responsible for firms' decision making and operating (Hoitash et al., 2016), although CFOs have more important influence on corporate financial system which include the financial report (Mian, 2001), and their effect on financial report is significant (Geiger and North, 2006). But the CEOs are final decision maker. Under the SOX, both CEOs and CFOs must be set up, maintain and evaluate the effectiveness of internal control, and in the quarterly and annual financial statements report the evaluation and change (Hoitash et al., 2011).

3.3 Methodology

The data are based on S&P 1500 from Execomp, Compustat and CRSP. Executive compensation and information data are got form Execucomp directly and the financial data from Compustat. Comparability data are got from CRSP monthly database and the earnings are get from quarterly compustat. The compensation data obtain from ExecuComp and merge this data to get the financial and accounting variables from the Center for Research in Security Prices (CRSP) and Compustat datasets. For the executive in the company, define the CEO as annual title "CEO". The sample period is from 1994-2021, following Lai et al. (2021) exclude financial firms (SIC codes 6000-6999). Due to the unique nature of the financial industry, its industry characteristics, and different regulatory and disclosure requirements, this study excludes companies in the financial sector.

3.3.1 Measurement of overconfidence

Those CEOs who cannot diversify the risk in their firms can be seen as overconfidence, CEOs who did not exercise vested and "value" stock options, and those who were net buyers of their own company's stock (Malmendier and Tate, 2005). The method to measure overconfidence focus on four ways. For example,based on the exercise option include holder 67 and long holder (Malmendier and Tate, 2005), earning forecast approach (Otto, 2014), press-based approach (Hishlefer et al., 2012) and survey based approach (Graham et al. 2007). In this paper, following Malmendier and Tate (2005) and Chen et al., (2020), overconfident is based on the option compensation. CEO (Options) takes a value 1 if a CEO postpones the exercise of vested options that are at least 67% for twice in the money option as overconfidence. Overconfidence CEOs are highly expose in the firm risk while rational CEOs through transfer their vested and “deep-in-the-money” options. We could not get the detail data like Malmendier and Tate (2005). Later research demonstrates through robustness tests and find that results are unchanged if CEOs hold 67% or more in the money options just once in the sample (Campbell et al., 2011; Hishleifer et al., 2012).

Therefore, in this paper the measure of the CEO overconfidence is based on the options in the entire career for once (Hilshleifer et al., 2012; Chen et al., 2020). The overconfidence measure data is got from Execomp database, first, calculate the realizable value per option, total realizable value of unexercised_exercisable options scaled by their total number. Then, calculate the estimated exercise price as the fiscal year-end share price minus the realizable value per option calculated in the first step. Finally, the degree of “in-the-money” is the value of share price divided by exercise price minus 1.

$$average\ option\ value = \frac{unexercised\ exercisable\ options\ value}{unexercised\ exercisable\ options\ number}$$

$$oc = \frac{share\ price\ at\ the\ end\ of\ fiscal\ year}{share\ price\ at\ the\ end\ of\ fiscal\ year - average\ option\ value} - 1 \qquad (1)$$

$$= \frac{average\ option\ value}{share\ price\ at\ the\ end\ of\ fiscal\ year - average\ option\ value}$$

Overconfidence is indicator (dummy) variable equals to 1 if OC exceeds 0.67 for twice, otherwise will be 0.

3.3.2 Financial statement comparability measure

Following De Franco et al. (2011), measure the comparability as follow:

$$Financial\ statement_i = f_i(economics\ events_i) \qquad (2)$$

Where f_i represent firms' accounting system, if the two companies have similar mappings, their accounting systems can be compared. The equation 2 indicate financial statements are economic events and the accounting functions of these events. The second step is empirical measure the individual firm i's accounting function, using firm i's 16 previous quarter earnings.

$$Earnings_{it} = \alpha_i + \beta_i Return_{it} + \varepsilon_{it} \qquad (3)$$

Where Earnings represent the quarterly net income before extraordinary items divided by the market value of equity at the end of the previous quarter and Return is the raw stock return during quarter t. The estimate coefficient of the firm i is $\hat{\alpha}_i$ and $\hat{\beta}_i$, same for the firm j the coefficient is $\hat{\alpha}_j and\ \hat{\beta}_j$, the closeness of two firms indicate their comparability, if two companies go through the same economic events, the more comparable the accounting between companies, the more similar their financial statements will be. We calculate the firm i's and j's accounting response to firm i's economic events ($Return_{it}$):

$$E(Earnings)_{iit} = \hat{\alpha}_i + \hat{\beta}_i(Return_{it}) \qquad (4)$$

$$E(Earnings)_{ijt} = \hat{\alpha}_j + \hat{\beta}_j(Return_{it}) \qquad (5)$$

Where $E(Earnings)_{iit}$ indicate the predict earnings of firm i, given the accounting function and return of firm i in quarter t. $E(Earnings)_{ijt}$ indicate the predict earnings of firm j, given the accounting function and return of firm j in quarter t. The comparability between firm i and j are defined as the ($CompAcct_{ijt}$) as the negative of the average absolute difference between the predicted earnings using firm i 's and j 's functions:

$$CompAcct_{ijt} = -\frac{1}{16} \times \sum_{t-15}^{t} |E(Earnings)_{iit} - E(Earnings)_{ijt} \qquad (6)$$

The higher value represents the higher comparability. The greater financial statement between firm i and firm j, the absolute difference between $E(Earnings)_{iit}$ and $E(Earnings)_{ijt}$ are smaller. Last, using the average of firm i's four highest comparability scores during year t ($CompAcct4_{it}$), the average of all of firm i's comparability scores during year t ($CompAcctind_{it}$).

3.3.3 Model specification

This paper uses the following model to investigate the impact of top management team overconfidence on financial reporting comparability:

$$Accounting\ comparability\ _{j,t} = \beta_0 + \beta_1 CEO\_overconfidence_{i,t} + \beta_2 ROA_{i,t} + \beta_3 MTB_{i.t} + \beta_4 Lev_{i,t} + \beta_5 Loss_{i,t} + \beta_6 Cashflow_{i,t} + \beta_7 Sale_{it} + \beta_8 STD\_cashflow_{i,t} + \beta_9 STD\_sale_{i,t} + Industry + Year + \varepsilon_{i,t} \quad (7)$$

In equation (6), the dependent variable is comparability, measured in year t, is one of four financial statement comparability. In estimating equation (7), this paper use OLS regression when comparability is the dependent variable and independent variable is overconfidence, all the independent variables are measured in year t (holder67).

Overconfidence is dummy variable indicate the exercise of vested options that are at least 67% in the money option in the entire period for twice (Hishleifer et al., 2012). Dependent variables are comparability follow by De Franco et al. (2011). Follow the previous research the control variables Loss is a dummy variable equals to 1 if the firm report loss in operating income for a fiscal year, otherwise equals to 0 (Dechow and Dichev, 2002). ROA indicates the firm's return on assets, defined as the net income scaled by total assets, if firm has poor performance, they are able to disclosure (Miller, 2002). Market to book ratio use to evaluate a company's current market value relative to its book value which is represent the growth and proprietary costs (Bamber and Cheon, 1998). Leverage is ratio of long-term debt to total assets measured at the end of the fiscal year (Francis et al., 2014). Cash flow due to its uncertainty impact the comparability (Francis et al., 2014). STD_CFO is the standard deviation of the firm i's cash flow from operations. STD_Sale is the standard deviation of the firms' sale. All regression fixes the Fama-French industry effect and year effect.

3.4 Summary statistics

This part shows all variables measurement which is into three groups. Including dependent variables, alternative variables, independent variables and the control variables. The definition and the method are show as follow table.

Table 3.1 Variable measurement and definition

Variable	Symbol	Measure
Dependent variables		
Four highest firms	Compacct_4	Based on average Compacct of the four firms j with the highest comparability to firm i during period t.
Ten highest firms	Compacct_10	Based on average Compacct of the ten firms j with the highest comparability to firm i during period t.
Median compacct	CompacctInd	The median Compacct for all firms j in the same industry for the firm i.

Mean compacct	ComacctIndmd	The mean Compacct for all firms j in the same industry for the firm i.
Independent variables		
Overconfidence	Holder67	Indicator variable has a value of 1 when the option-based measure in Ahmed et al. (2013) exceeds 0.67 at least twice during the full sample period and zero otherwise.
Control variables		
Return on asset	ROA	Net income divided by total assets at the end of the year.
Market to book	MTB	The market value of equity plus the book value of debt divided by the total assets at the end of the year.
Leverage	Lev	The ratio of total liabilities to total assets at the fiscal year end.
Loss	Loss	Indicator variable coded as one if firm i had negative ROA for year t-1.
Standard deviation of cash flow	STD_CFO	Standard deviation of firm i's cash flows from operations (OANCF) from year t-5 to t-1.
Standard deviation of sale	STD_Sale	Standard deviation of firm i's sales from year t-5 to t-1.
Cash flow	OCF	Operating cash flow scaled by total assets
Sale revenue	Sale	Total sale divided by total asset
Auditor	Big4	A dummy equal one if the auditor is one of the Big 4 auditing firms, and zero otherwise.
Analyst	Analyst	The natural logarithm of the number of analysts the firm.
Board of independent director	Busyboard	The ratio of independent directors holding three or more external board seats to the number of independent directors.
Age	Age	The current age of CEO
CEO gender	Gender	If CEO is women equal to 1 otherwise 0

Summary statistic table contains all the variables used in this paper which contains the dependent variable comparability, independent variable executive overconfidence and firm control variables. Compacct4 is the average $acctcomp_{ijt}$ of the four firms j with the highest comparability to firm i during period t. Compacct10 is the average $acctcomp_{ijt}$ of the 10 firms j with the highest comparability to firm i during the time t. Similarly, CompacctInd is the median $acctcomp_{ijt}$ for all firms j in the same industry as firm i during period t. CompacctIndmd is the mean for all firms j in the same industry as firm I during period t.

From the table 3.1 the results show the comparability of financial statements is measured at -0.55, and a standard deviation of 1.023, which is similar to the findings of Kim et al. (2016).

Meanwhile, the mean overconfidence is 0.57 and standard deviation is 0.49, which is similar to the results reported in Campbell et al. (2011). These findings provide valuable insights into the degree of comparability in financial reporting and the level of CEO overconfidence in decision-making.

Table 3.2 Descriptive statistics

Variable	N	Mean	Std. dev.	Min	Max
Compacct_4	46,044	-0.550	1.023	-7.12	-0.02
Compacct_10	46,044	-0.794	1.353	-9.14	-0.03
Compacct_Ind	46,044	-3.114	2.243	-14.74	-0.55
CompacctIndmd	46,044	-2.291	2.424	-15.14	-0.34
Holder67	56,035	0.573	0.495	0	1
Lev	100,507	0.244	0.283	0	3.105
ROA	100,766	-0.054	0.421	-6.581	0.362
MTB	99,356	2.771	5.423	-25.868	37.538
Sale	100,762	0.831	0.799	0	4.984
OCF	98,890	0.019	0.292	-4.583	0.413
STD_CFO	95,501	0.098	0.322	0.002	5.754
STD_Sale	98,330	0.151	0.204	0	1.710
Loss	100,787	0.301	0.459	0	1

Next, run the PW correlation test, from the regression the results show that upon conducting the pw correlation analysis, there is a positive correlation of 0.038 and 0.032 between CEO overconfidence and financial statement comparability. This indicates that the correlation between the comparability and managerial overconfidence is significantly positive at the 1% level. The results show that most of the control variables are significantly correlated at low to moderate levels, which alleviates concerns about potential multicollinearity problems. These results suggest that CEO overconfidence may have a positive impact on financial statement comparability, potentially influencing the quality and usefulness of financial reporting.

Table 3.3 PW correlation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Compacct4	1						
Compacct10	0.98	1					
Holder67	0.038	0.032	1				
ROA	0.194	0.203	0.052	1			
Loss	-0.283	-0.295	-0.070	-0.412	1		
MTB	0.056	0.055	0.081	0.036	0.009	1	
Lev	-0.120	-0.123	-0.025	-0.266	0.085	-0.112	1
STD_sale	-0.184	-0.192	0.006	-0.109	0.127	0.056	0.023
STD_CFO	-0.149	-0.154	-0.007	-0.498	0.214	0.023	0.114
Sale	-0.095	-0.107	-0.001	0.108	-0.096	0.038	-0.033
OCF	0.138	0.144	0.068	0.831	-0.365	0.036	-0.209
	(8)	(9)	(10)		(11)		

STD_sale	1			
STD_CFO	0.179	1		
Sale	0.488	-0.052	1	
OCF	-0.075	-0.528	0.174	1

In order to observe the overconfidence effect on the financial statement comparability.By separating the sample into two parts experimental (overconfidence=1) and control (overconfidence=0). The univariate test indicate that the experimental group comparability is higher than the control group. In the control group (overconfidence=0) the mean and the median of comparability is -0.46 and -0.66 while the experimental group is -0.39 and -0.59. The mean of the experimental group is higher than the control group. And the difference is significant at the 1% level. This test shows that firms with overconfidence managers have more comparable financial statements than those of other firms.

Table 3.4 Univariate test

Variables	G1(0)	Mean1	G2(1)	Mean2	MeanDiff
Compacct_4	12174	-0.46	16755	-0.394	-0.065***
Compacct_10	12174	-0.664	16755	-0.59	-0.074***
MTB	23421	2.399	31352	3.158	-0.759***
OCF	23338	0.073	31247	0.091	-0.018***
Sale	23878	0.94	32037	0.938	0.002
ROA	23882	0.012	32037	0.032	-0.020***
STD_CFO	22620	0.052	30623	0.05	0.002
STD_Sale	23189	0.137	31560	0.139	-0.002
Loss	23887	0.21	32040	0.158	0.052***
Lev	23803	0.254	31925	0.243	0.011***

3.5 Empirical results

This test exams the relation between the CEO overconfidence and financial statement comparability. The results are shown in the table 3.5. From the table shows that firms which has overconfidence CEO has more comparability among peer industry level. The coefficient is statistically significant at the 1% level. This result supports the hypothesis that CEO overconfidence influence the financial statement comparability. For the control variables, the companies with higher leverage, larger standard deviation in sales and cash flows, and higher proportion of losses in the previous quarters tend to have lower accounting comparability. The coefficients for leverage, STD_Sale, STD_CFO, and Loss are negative and statistically significant.

Table 3.5 The impact of CEO overconfidence and financial statement comparability

	(1) Compacct_4	(2) Compacct_10
Holder67	0.058***	0.069***
	(4.89)	(4.43)
Lev	-0.396***	-0.534***
	(-8.91)	(-8.98)
MTB	0.002	0.002
	(1.4)	(0.86)
Sale	-0.056***	-0.071***
	(-4.71)	(-4.49)
STD_Sale	-0.474***	-0.649***
	(-6.88)	(-7.27)
ROA	0.767***	1.032***
	(7.43)	(7.9)
OCF	-0.356**	-0.423**
	(-3.18)	(-2.89)
STD_CFO	-0.849***	-1.127***
	(-4.85)	(-5.00)
Loss	-0.436***	-0.590***
	(-17.96)	(-18.61)
Rsquared	0.174	0.204
Industry FE	Yes	Yes
Year FE	Yes	Yes
Cons	0.096*	0.075
	(2.26)	(1.36)
N	23453	23453

Note: This table shows the results of the regressions of CEO overconfidence on accounting comparability and control variables. T statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. All variables are defined at Appendix B. Industry and year effect are controlled. In this regression the dependent variable is four and ten highest financial statement comparability and independent variable is CEO overconfidence.

3.6 Robust test

To ensure the robustness of the findings, this study explores additional tests by changing the dependent variable, as suggested by De Franco et al. (2011). Specifically, by adding the mean and median comparability across firms in the industry as the dependent variables. For the measure of the overconfidence, following Campbell et al. (2011), more than 100% in the money, which means cutoff the 100%. The results show that the column (1) and (3) is the relationship between CEO overconfidence and mean and median financial statement comparability which is significant at the 1% level. The column 2 and 4 shows that

overconfidence has a lagged positive effect on mean and median financial statement comparability. This finding further supports the robustness of our conclusions regarding the positive relationship between CEO overconfidence and financial statement comparability even with different measure overconfidence.

Table 3.6 Robust test

	(1) CompacctInd	(2) CompacctInd	(3) CompacctIndmd	(4) CompacctIndmd
Holder100	0.0981***		0.125***	
	(4.55)		(5.13)	
Holder100(lag)		0.118***		0.145***
		(5.29)		(5.8)
ROA	2.003***	2.033***	2.570***	2.605***
	(9.94)	(9.88)	(11.01)	(10.9)
MTB	0.002	0.002	-0.002	-0.001
	(0.51)	(0.45)	(-0.43)	(-0.30)
Loss	-0.575***	-0.591***	-0.884***	-0.904***
	(-12.81)	(-12.78)	(-16.54)	(-16.40)
Lev	-0.659***	-0.684***	-0.782***	-0.809***
	(-7.56)	(-7.52)	(-7.66)	(-7.58)
Sale	-0.0970***	-0.0980***	-0.0909***	-0.0949***
	(-4.38)	(-4.25)	(-3.62)	(-3.61)
OCF	-0.479*	-0.572*	-0.162	-0.273
	(-2.15)	(-2.49)	(-0.61)	(-0.99)
STD_CFO	-2.946***	-3.100***	-3.614***	-3.803***
	(-7.48)	(-7.55)	(-7.73)	(-7.80)
STD_Sale	-0.954***	-0.982***	-0.968***	-0.998***
	(-7.67)	(-7.47)	(-6.80)	(-6.64)
Rsquared	0.355	0.358	0.29	0.294
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Cons	-1.796***	-1.732***	-0.498***	-0.492***
	(-22.65)	(-22.12)	(-5.59)	(-5.66)
N	23453	22219	23453	22219

Note: T statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. All variables are defined at Appendix B. Industry and year effect are fixed. Dependent variables are Compacct_ind and Compacct_indmd. Independent variable is Holder100 and lag Holder100.

3.7 Endogeneity test

The relationship between CEO overconfidence and financial statement comparability may be subject to endogeneity issues, thus requiring us to use a 2sls model to ensure the robustness

of the regression. Following Huang and Tarkom (2022) and Lai et al. (2021) by using the leave-one-out industry average of CEO overconfidence as the instrument variable to take the 2sls test. In the first step is to get the predict variable. In the second step using the predict overconfidence to replace.

The results are present at the table 3.7. In column (1) (2) and (3), columns 1 represent the first stage and the column (2) and (3) represent the second stage regression result. The coefficient of mean of overconfidence as expected is positive and significant in explain the overconfidence. Postestimation results confirm the validity of the instruments variable. The baseline finding is robust to the test.

Table 3.7 Endogeneity test by 2sls method

	(1) First stage	(2) Second stage	(3) Second stage
Industry average holder67	1.057***		
	(36.68)		
Predict_holder67		0.460***	0.501***
		(7.68)	(6.36)
ROA	-0.018	0.320***	0.444***
	(-1.14)	(8.47)	(8.92)
MTB	0.006***	0.010***	0.014***
	(13.23)	(8.92)	(9.34)
Lev	0.043***	-0.518***	-0.713***
	(4.25)	(-24.07)	(-25.18)
Loss	-0.086***	-0.512***	-0.713***
	(-13.91)	(-38.69)	(-40.94)
STD_CFO	-0.016	-0.503***	-0.656***
	(-0.67)	(-9.43)	(-9.36)
STD_Sale	0.044**	-0.744***	-0.973***
	(2.93)	(-20.31)	(-20.19)
OCF	0.215***	-0.316***	-0.381***
	(9.46)	(-6.67)	(-6.12)
Sale	-0.021***	-0.064***	-0.109***
	(-6.66)	(-8.26)	(-10.68)
Rsquared	0.039	0.121	0.130
Cons	-0.046**	-0.403***	-0.513***
	(-2.63)	(-11.48)	(-11.09)
N	52535	43694	43694

Note: T statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. All variables are defined at Appendix B.

3.8 Additional test

So far, this research has demonstrated that CEO overconfidence promotes more comparable financial statements. In this section, it aims to investigate other potential mechanisms that may affect comparability. By using subsample test the relationship between the executive overconfidence and the monitor role. External monitoring, internal governance, and CEO characteristics can all impact comparability. For the outside monitor and internal governance, following Zhang et al. (2020), this study uses three variables, which include Big4, analyst coverage and busy board. Big4 is used to measure whether the top four audit institutions have an impact on managers' overconfidence, because compared with other institutions, the professional audit process and audit methods of the four audit affairs can play a better role in audit (Francis et al., 2014). When external monitoring is more stringent, CEOs are more willing to provide more comparable financial statements. Financial analysts represent the length of financial supervision. Having more analysts reduces opportunism, and firms with more analysts show they have strong regulations (Chen et al., 2018). High analyst coverage and Big4 audits reduce managerial opportunism. To test this prediction, this study constructs a sample of internal and external monitoring environments. Hence, providing a method to examine whether overconfidence increases the decision-making role of accounting information under different test conditions. Regarding internal governance mechanisms, this study measures internal monitoring by examining whether the board of directors has influence on financial statement comparability. When the busy board is below the median, it indicates strong monitoring, while above the median it indicates weaker monitoring. In addition, CEO age and gender can also influence their behavior.

3.8.1 Mechanisms through audit affect CEOs overconfidence and financial statement comparability

In the large studies of public firms, Big4 has been found provide higher quality audits than non-Big4 firms. High quality audit improves the credibility of the financial reports (DeFond and Zhang, 2014). The quality of audit can be seen as an important factor due to not all the facilities are audit at the same level (Earnhart and Harrington, 2021). Comparing with counter-auditing firms, the Big4 firms are less likely to involve in opportunistically, so that had better supervision mechanism and structure (Sìmnett et al., 2009). This table show the result of the effect of the strong audit monitor role and weak audit monitor role with the CEO overconfidence and financial statement comparability. Using the Big4 due to their accounting and professional service firms are more effective in supervising and preventing self-interested managerial opportunistic behaviours (Becker et al., 1998). Split the audit from strong Big4 audit firm equal

to 1 and weak audit firm equal to 0. The results show the coefficients of relationship between CEO overconfidence and financial statement comparability are significant at 1% level at the strong monitor role. This indicates that in companies with strong audit oversight, the overconfidence of CEOs is more likely to influence accounting comparability. Overconfident CEOs have more confident expectations about the company's future. When audit regulation is strict, these reports are more likely to be subject to rigorous scrutiny and any deviations from accounting standards will be corrected. Therefore, CEOs are more willing to provide more comparable statements to investors and regulators to demonstrate confidence in financial statements. Investors and stakeholders generally view the presence of a Big4 accounting firm as a positive, adding credibility and reliability to a company's financial statements. Comparable financial statements allow investors to more clearly compare the company's financial position.

Table 3.8 Audit effect on CEO overconfidence and financial statement comparability

	(1) Weak Audit Compacct_4	(2) Weak Audit Compacct_10	(3) Strong Audit Compacct_4	(4) Strong Audit Compacct_10
Holder67	0.005	0.019	0.067***	0.078***
	(0.18)	(0.52)	(5.02)	(4.44)
Lev	-0.564***	-0.750***	-0.402***	-0.541***
	(-4.49)	(-4.58)	(-8.58)	(-8.59)
MTBV	0.004	0.003	0.002	0.002
	(1.14)	(0.65)	(1.25)	(0.91)
Sale	-0.053*	-0.061	-0.056***	-0.072***
	(-2.05)	(-1.86)	(-4.10)	(-4.00)
STD_Sale	-0.301**	-0.489***	-0.510***	-0.679***
	(-2.83)	(-3.50)	(-6.35)	(-6.52)
ROA	0.489*	0.652*	0.826***	1.111***
	(2.06)	(2.08)	(7.29)	(7.83)
OCF	0.26	0.399	-0.518***	-0.646***
	(1.04)	(1.21)	(-4.12)	(-3.92)
STD_CFO	-0.333	-0.46	-1.085***	-1.448***
	(-1.22)	(-1.28)	(-5.14)	(-5.34)
Loss	-0.252***	-0.365***	-0.468***	-0.630***
	(-5.42)	(-5.92)	(-16.83)	(-17.43)
Rsquared	0.181	0.225	0.184	0.213
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Cons	0.400*	0.529*	(0.095)	0.073
	(2.36)	(2.46)	(1.94)	(1.14)
N	4202	4202	19238	19238

Note: T statistics ***, ** and * represent statistical significance at the 1%, 5% levels and 10% levels, based on two-tailed tests of significance. Weak audit means the firm without the four

largest audit firms. Strong audit means firms audit by four largest audit firms. The industry and year effect are controlled.

3.8.2 Mechanisms through analyst effect on CEOs overconfidence and financial statement comparability

Subsequently, by using the analyst coverage to analysis the relation between CEO overconfidence and financial statement comparability. This table illustrates the role of external monitoring by financial analysts. Using the analyst coverage is due to higher analyst coverage less opportunistic activities (Chen et al., 2017), increase the information transparency (Arya and Mittendorf, 2007), guide the investor (Barka et al., 2023), decrease the information asymmetry times (Loh and Stulz, 2018), reduce the corporate financing costs (Derrien et al., 2016), restrain the motivation of earning management (Hong er al., 2014). The role of analysts is not only for infomediary but also monitor role. Higher analyst coverage indicates the stronger regulating by financial analysts. By dividing analysts into two groups: strong and weak. The strong analyst group is defined as analysts above the median of the market, while the weak analyst group is defined as analysts below the median of the market. The results show that the relationship between CEO overconfidence and financial statement comparability remains significant at the 1% level in the lower analyst group.

This finding suggests that with weak external monitoring, overconfident CEOs have more influence on the comparable financial statements. Weaker analytics firms may not be able to provide the same level of rigorous scrutiny or detailed analysis as more reputable or stronger analytics firms. This reduced level of external oversight can give overconfident CEOs more leeway to defend their views on financial reporting and accounting practices, potentially leading to more subjective interpretations or aggressive accounting choices that affect comparability. Analyst coverage is often used as a market discipline mechanism to encourage conservative and transparent financial reporting practices. If analytics firms are perceived as weaker or less influential, there may be less pressure on companies to stick to conservative reporting. Overconfident CEOs may take advantage of the situation by pursuing more aggressive or optimistic financial reporting strategies, believing that they are better at forecasting and managing the business, thus affecting comparability. Strong analytics firms often challenge the assumptions and decisions of company management as a counterbalance to potentially overly optimistic financial performance. In the absence of this balance, overconfident CEOs may face fewer challenges in financial reporting decisions, allowing their personal biases and overconfidence to have a greater impact on the comparability of financial statements. When analyst coverage is weak, external validation or

criticism of these practices is less visible, which can make financial reporting practices prioritize the CEO's vision whether involve in comparability in financial reports.

Table 3.9 Analyst effect on CEO overconfidence and financial statement comparability

	(1) Weak Analyst Compacct_4	(2) Weak Analyst Compacct_10	(3) Strong Analyst Compacct_4	(4) Strong Analyst Compacct_10
Holder67	0.119***	0.157***	-0.002	-0.003
	(5.31)	(5.38)	(-0.16)	(-0.14)
Lev	-0.067	-0.105	-0.413***	-0.572***
	(-0.90)	(-1.07)	(-7.98)	(-8.57)
MTB	-0.003	-0.006*	-0.005***	-0.007***
	(-1.45)	(-2.00)	(-3.45)	(-3.88)
Sale	-0.223***	-0.304***	-0.208***	-0.249***
	(-6.65)	(-6.99)	(-7.65)	(-7.12)
STD_Sale	-0.072	-0.155	-0.293***	-0.354***
	(-0.86)	(-1.42)	(-4.24)	(-3.99)
ROA	0.517***	0.711***	1.061***	1.419***
	(6.15)	(6.52)	(13.85)	(14.39)
OCF	-0.168	-0.195	-0.199	-0.348**
	(-1.47)	(-1.32)	(-1.93)	(-2.62)
STD_CFO	-0.688**	-0.792**	-1.461***	-2.104***
	(-3.15)	(-2.79)	(-6.73)	(-7.54)
Loss	-0.242***	-0.349***	-0.199***	-0.255***
	(-9.10)	(-10.09)	(-9.42)	(-9.41)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Rsquared	0.656	0.669	0.545	0.584
Cons	-0.190***	-0.291***	0.076*	0.027
	(-4.15)	(-4.89)	-2.29	-0.62
N	6966	6966	10091	10091

Note: This table presents the results for the impact of analyst coverage. All variables are as defined in Appendix B. Regressions include year and industry fixed effects. T statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

3.8.3 Mechanism through internal governance effect on CEOs overconfidence and financial statement comparability

The role of board of directors should monitor the firm's managers in order to decrease the agency conflicts because of the separation of ownership and control (Fama and Jensen, 1983). Board of independence is considered a key factor of good governance of the firm (Khan et al., 2013). Independent directors are closer to various stakeholder groups, more aware of their expectations, and more likely to meet their interests (Ibrahim and Angelidis, 1995). Companies

hire more independent directors to their boards because they tend to act as a check on the self-righteous decisions of executives (Walsh and Seward, 1990). Previous researches find that more independent boards relate to lower possibility of financial statement fraud and earning manipulations (Beasley, 1996). More independent boards are more likely to correct internal control deficiencies in a timely manner. As a result, boards with a greater percentage of independent directors have more influence over the financial reporting process and more influence over management when potential problems arise that could affect timely reporting (Goh, 2010). The board independence has significantly and positively impact on the quality of the internal control (Chen et al., 2017). The results in table 3.9 illustrate the impact of the internal monitoring mechanism on the relationship between CEO overconfidence and financial statement comparability. Specifically, in this research using the busy board variable to measure the strength of internal monitoring, where a higher ratio of independent directors who hold three or more board positions is indicative of stronger monitoring.

Following the Zhang et al. (2020), in this context, busy board is defined as independent directors holding three or more external boards seats. Firms with strong board monitor are below median Busy Board each year while weak board monitor represents above median Busy Board each year. Upon examining the regression results, the results show that the coefficient is significant at the 5% level, indicating that CEOs are more likely to be influenced by comparability concerns in the context of weak board monitoring. Weak internal control mechanisms mean lack of rigorous oversight of CEOs' decisions and actions. In the weak monitor firms, CEOs may face fewer challenges or objections. This could lead them to enforce their own views on financial reporting practices, which could affect the comparability of financial statements. Without a strong board to provide checks and balances, these CEOs may adopt more aggressive accounting policies or deviate from industry norms, affecting comparability. Overconfidence CEOs can lead to more arbitrary strategic decisions, including mergers and acquisitions, or expansions, often without adequate review. Where inside monitor is weak, these decisions may not adequately examine their impact on financial reporting comparability. Due to the weak board monitor, less pressure to align with external benchmarks or standards may result in less comparability of financial statements. The combination of overconfidence and weak board oversight can lead to a governance environment in which financial reporting is more susceptible to the personal characteristics and preferences of the CEO, potentially compromising the objectivity and comparability of financial statements.

Table 3.10 Internal monitor effect on CEO overconfidence and financial statement comparability

	(1) Strong Board Compacct_4	(2) Strong Board Compacct_10	(3) Weak Board Compacct_4	(4) Weak Board Compacct_10
Holder67	0.045	0.064	0.069**	0.086**
	(1.55)	(1.7)	(3)	(2.89)
Lev	-0.920***	-1.205***	-0.450***	-0.636***
	(-9.31)	(-9.55)	(-6.31)	(-6.83)
MTB	-0.004	-0.006*	-0.004*	-0.005
	(-1.43)	(-1.96)	(-1.97)	(-1.86)
Sale	-0.453***	-0.578***	-0.346***	-0.445***
	(-10.70)	(-10.70)	(-8.95)	(-8.80)
STD_Sale	-0.253*	-0.383**	-0.700***	-0.963***
	(-2.22)	(-2.63)	(-7.25)	(-7.63)
ROA	0.692***	0.979***	1.025***	1.335***
	(7.94)	(8.79)	(10.83)	(10.81)
OCF	-0.268*	-0.397*	-0.1	-0.116
	(-2.10)	(-2.44)	(-0.74)	(-0.66)
STD_CFO	-0.625*	-0.831**	-1.667***	-2.243***
	(-2.50)	(-2.60)	(-6.21)	(-6.40)
Loss	-0.224***	-0.311***	-0.233***	-0.325***
	(-6.75)	(-7.34)	(-8.43)	(-8.98)
Rsquared	0.651	0.675	0.597	0.620
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Cons	0.217***	0.201**	0.125**	0.099
	(3.9)	(2.83)	(2.6)	(1.57)
N	6069	6069	7950	7950

Note: All variables are as defined in Appendix B. T statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Board is split into two groups: strong and weak. Strong board is sub-sample with three or more external board seats below median each year. Weak board is sub-sample above the median each year.

3.8.4 Demographic characteristic of CEOs overconfidence and financial statement comparability

Gender can lead to differences in personality traits such as overconfidence, conservatism, and narcissism, thereby influencing a manager's risk preference and ability to resolve key company issues (Brunzel, 2021; Galasso and Simcoe, 2011). Because gender largely determines individual personality traits in many aspects, the composition of different men and women in management team can lead to different tendencies in group decision-making

behavior (Hu et al., 2023). Previous research find that manager gender relates to firm performance (Danes et al., 2007) and financial capital allocation and financial report quality (Khlif and Achek, 2017). Huang and Kisgen (2013) conduct a study examining the impact of CFO gender on firm growth and found that firms with female CFOs tended to experience slower growth compared to those with male CFOs. Adams and Ferreira (2009) find that female board members improved corporate governance but reduced firm performance. Their study suggests that gender diversity on boards of directors can improve board decision-making, but may not necessarily lead to better financial performance.

Crawford and Stankov's (1996) study show that older individuals tend to exhibit more overconfidence than younger ones. Young CEOs are more likely enter the new business compare with old CEO and making more risky investments and divestments (Li et al., 2017). Male executives are having risk-taking and overconfidence levels than female executives (e.g., Khan and Vieito, 2013; Faccio et al., 2016) at the mean time for the young executives are having higher risk-taking and overconfidence levels than old executives (Li et al., 2017).

From the table 3.11 shows that there is no relationship between age and gender effect with the financial statement comparability. In other words, age and gender do not affect the comparability of financial statements of overconfident CEOs. This is because the comparability of financial statements depends on the standards and degree of standardization used in the preparation of financial statements. In addition, the comparability of financial statements also depends on the company's accounting policies and practices. Even within the same industry, different companies may adopt different accounting policies, which may affect the presentation and metrics of financial statements. While the personal characteristics of a CEO may influence a company's strategic direction, culture, and risk appetite, steps are often taken to ensure objectivity and accuracy of financial data when it comes to the preparation and comparability of financial statements. However, these differences in accounting policies are generally independent of the CEO's age and gender.

Table 3.11 The CEO characteristics influence of financial statement comparability

	(1)	(2)	(3)	(4)
	Compacct4	Compacct10	Compacct4	Compacct10
Holder67	0.057***	0.067***	0.059***	0.070***
	(4.62)	(4.17)	(4.91)	(4.46)
Age	-0.002	-0.002		
	(-1.87)	(-1.95)		
Gender			-0.029	-0.022
			(-0.74)	(-0.43)
ROA	0.831***	1.108***	0.781***	1.058***

	(7.26)	(7.61)	(7.4)	(7.91)
Lev	-0.413***	-0.563***	-0.389***	-0.525***
	(-8.75)	(-8.91)	(-8.70)	(-8.77)
MTB	0.003	0.002	0.002	0.002
	(1.41)	(0.82)	(1.38)	(0.84)
Loss	-0.405***	-0.543***	-0.391***	-0.525***
	(-16.11)	(-16.56)	(-16.58)	(-17.02)
Sale	-0.058***	-0.072***	-0.054***	-0.067***
	(-4.51)	(-4.20)	(-4.49)	(-4.25)
OCF	-0.395**	-0.459**	-0.318**	-0.372*
	(-3.24)	(-2.87)	(-2.81)	(-2.50)
STD_CFO	-0.888***	-1.162***	-0.866***	-1.149***
	(-4.67)	(-4.75)	(-4.93)	(-5.08)
STD_Sale	-0.524***	-0.728***	-0.488***	-0.668***
	(-6.83)	(-7.31)	(-7.03)	(-7.41)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Rsquared	0.174	0.204	0.170	0.200
Cons	0.266*	0.316*	0.117**	0.104
	(2.53)	(2.4)	(2.75)	(1.88)
N	21314	21314	23453	23453

Note: This table show the regression results of comparability on overconfidence after including the additional control variable, CEO age and CEO gender. All variables are as defined in Appendix B, t statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

3.9 Conclusion

This study examines the relationship between CEO overconfidence and financial statement comparability. This research finds that CEO overconfidence is associated with greater comparability. Specifically, the relationship between CEO overconfidence and comparability is magnified with more stringent external audits. These results indicate a significant positive correlation between CEO overconfidence and comparability when the audits are conducted by Big4 auditing firms. The impact of CEO overconfidence on financial statement comparability is more pronounced when analyst forecasts are weaker. Additionally, overconfident CEOs have a more significant influence on financial statements under weak internal controls. Furthermore, this study also incorporates demographic characteristics, including age and gender, and finds that they do not affect the impact of overconfident CEOs on the comparability of financial statements.

This article has both theoretical and practical significance. Previous studies demonstrate the relationship between the CEO overconfidence and corporate investment (Malmendier and

Tate, 2005), acquisitions (Malmendier and Tate, 2008), corporate innovation (Galasso and Simcoe, 2011), stock crash risk (Kim et al., 2016), accounting conservative (Hsu et al., 2017), etc. This study adds the literature on the CEO overconfidence and financial statement comparability. This article expands research on CEO overconfidence. Previous studies have shown that CEO overconfidence can influence decision-making, but they do not explore the relationship between overconfidence and comparability. Drawing on upper echelons theory, this study provides an overview and delve into the relationship between CEO overconfidence and comparability, including how this relationship is affected by both internal and external regulatory enhancements. This offers new insights.

For regulatory bodies, investors, and shareholders, the companies of overconfident CEOs do not necessarily possess a poor information environment. A positive correlation exists between overconfident CEOs and financial reporting comparability. Investors and stakeholders should leverage strong external audits to obtain more comparable reports, simplifying investment costs. Secondly, boards should be aware of the impact of CEO overconfidence on financial reporting and strategic decision-making. Implementing checks and balances, such as hiring Big four auditing firms, can help mitigate risks associated with overconfidence. For regulatory bodies, enhancing oversight, especially for companies with overconfident CEOs, involves stricter scrutiny, including mandatory disclosures. This can counteract financial opacity and make financial reports more comparable. Implementing executive training programs focused on financial ethics, risk management, and decision-making psychology can help CEOs understand and potentially mitigate the impact of their overconfidence on financial reporting and corporate governance.

Chapter 4 CEO overconfidence and labor investment efficiency

Abstract

This paper investigates the relationship between overconfident CEOs and labor investment in US publicly listed companies from 1994 to 2021. The aim is to explore whether companies led by overconfident CEOs result in inefficient labor investments. The findings indicate that companies led by overconfident CEOs do experience inefficient labor investments. Furthermore, the study reveals that having more free cash flow, longer tenures, and investment in innovation do not affect labor investment. However, the age of the CEO and the length of time the company has been established do influence labor investment. This paper enriches the literature on executive characteristics and labor investment efficiency, providing insights and guidance for companies looking to optimize their labor resource allocation.

Keywords: Overconfidence, Labor Investment, Upper Echelons Theory

4.1 Introduction

Agency theory indicates that mangers overinvest in order to obtain personal benefits such as bonuses, empire building, and securing their positions. The misalignment between managers and investors makes the agency problem (Jensen and Meckling, 1976) and information asymmetry (Jensen, 1986). In psychology, overconfidence indicate the "better than average", this is means mangers overestimate their ability and relative skills (Larwood and Whittaker, 1977; Svenson, 1981; Alicke, 1985). They attribute the good results into their ability, and bad one to bad luck (Miller and Ross, 1975). It is likely that a CEO who pick the project by himself can control the project and underestimate the bad outcome (Langer, 1975; March and Shapira ,1987).

Overconfident managers tend to overestimate the future cash flow of the investment projects, bringing good results as well as their own ability (Heaton, 2012). As a result, they often mistake ongoing negative net present value projects for value creation. Nor can they rationally deal with negative feedback about the projects they run (Taylor and Brown, 1988; Taylor and Gollwitzer, 1995). Overconfidence managers also tend to ignore the negative feedback and choose the negative NPV projects compare with the rational managers (Malmendier and Tate, 2005). This poor performance project will lead to unequal arrange the firms' investment resources. In the end, the lack of investment in human resources will affect the development of the company.

Managers characteristics, ability have effect on firm performance. For example, Malmendier and Tate (2005) find that firm which has overconfidence CEO overestimate the return of their investment and exhibit greater sensitivity to cash flow. Malmendier and Tate (2008) find that CEOs who are overconfidence are more likely involve in the destroy value of M&A. This is especially at the diversity ones. Hirshleifer et al. (2012) find that overconfidence CEOs are more effective on the firm R&D investment. Kim et al. (2015) find overconfidence CEOs are more risky with the stock price crash. This is more obvious at the firm which contains more overconfidence managers. CEOs have been proved that are worse listeners and feedback seekers (Tost, Gino and Larrick, 2012; Meikle, Tenney and Moore, 2016), over optimistic with organization, planning and commitments (Larwood and Whittaker, 1977; Vallone et al.,1990), have lower analytical skills and cognitive ability (Stango, Yoong, Zinman, 2017; Chapman, et al., 2018).

Overconfidence also affects how managers respond to the human resources market. Because overconfident CEOs may be reluctant to release negative information about the human resources they receive. The news of personnel changes will make some investors act on the

news. Meanwhile, the internal atmosphere of employees and the morale of the company may be affected, which will affect the stock price of the company, and ultimately the performance of the company.

Labor plays a crucial role in the economy, yet previous literature has not extensively addressed labor investment. For instance, labor costs account for two-thirds of economic growth (Hamermesh, 1993; Bernanke, 2004). Instead, research has primarily focused on corporate investments, such as mergers and acquisitions or innovation. The study of human resource investments remains an important area of inquiry. Previous studies have lots of research based on the labor investment efficiency, for example, Zhang et al. (2020) based on financial statement comparability, Ben-Nasr and Alshwer (2016) focus on stock information disclosure, Ghaly et al. (2020) research the investors horizon, Jung, et al. (2014) exam the financial report quality, Khedmati et al. (2020) based on the CEO's tie with independent director of board. Ha and Feng (2018) explore the conditional conservatism.

Cao et al. (2023) find that real earnings smoothing is highly related with labour investment efficiency, which is support the private information signalling view of earning smooth. Lai et al. (2021) find overconfidence managers' decision-making traits could impact labor investment. For the corporate governance, research focus on institutional investors (Ghaly et al., 2020), stock liquidity (Mong et al., 2022), short selling mechanisms (Chu and Fang, 2020), analysts of the firm (Lee and Mo, 2020) improve the firms' labor investment efficiency. In this research, the main focus part is the relationship between CEO overconfidence and the firms' investment efficiency, if a CEO has overconfident characteristics, outside supervision cannot perform the monitor role and affect labor decisions making, and ultimately affect the company's market value. Since overconfident managers tend to overestimate the future return of their investment and underestimate the negative impact on the company's cash flow, overconfidence of managers leads to delay in loss recognition (Ahmed and Duellman, 2013). Previous researches demonstrate the relationship between CEO overconfidence and firm investment efficiency, with labor investment decisions being a significant factor. This research aims to investigate the relationship between these two factors.

This paper examines the relationship between CEO overconfidence and labor investment. Compared to other types of decisions, labor investments are relatively lower, and traditional economic models treat labor as a variable factor of production. With variable labor costs, current income can cover payments without requiring financing. Therefore, the question of whether CEO overconfidence influences labor investments is a worthwhile topic to explore. It is believed that a CEO's overconfidence can exacerbate frictions between investors and

executives due to information asymmetry, resulting in inefficient labor investments. Overconfident CEOs have optimistic expectations for the future, which can lead them to make decisions unilaterally. For example, they may over-hire labor due to their positive outlook on the future and retain underperforming employees, believing that this will not impact the company's performance. Alternatively, they may underinvest in labor because of their unrealistic expectations for the future. They might allocate resources that should have been invested in human capital to other areas, which may not be easily detected by investors due to information gaps. This ultimately leads to labor shortages. Numerous previous studies have explored the relationship between overconfidence and investment. However, there has been relatively less research on labor investment, which is a highly significant resource.

The main method of this research follows Malmendier and Tate (2005), using the executives' compensation as the main indicator. "The most common approach to measuring CEO overconfidence has been to use decisions that the executive makes on his or her personal portfolio of company stock options" (Malmendier and Tate, 2005). However, due to lack of the detail information of the options, following Hirshleifer et al. (2012) by using the average value of options combination of CEO per year. If the CEO, during the sample periods, owns options valued at 67% above the average value more than once, they are classified as overconfident. For the labor investment efficiency part, the approach follows the Pinnuck and Lilli (2007) and Jung et al. (2014), using the difference between net employment and expected employment. The sample include the period of 1994 to 2021 which include the main US firms. The results show that over confidence CEOs have significant influence on labor investment efficiency. After considering the endogeneity problem, the results still robust, hence, this research findings support the core hypothesis. Upon further analysis, the results show that the impact of CEOs on labor investment is more pronounced in companies with age characteristics and in those with a shorter establishment history. Middle-aged overconfident CEOs have the most significant effect on inefficient labor investments.

This study relates to several relevant literature. First, this study contributes to the literature on the labor investment efficiency. Previous research explores the relationship between financial report quality (Jung et al., 2014), CEO director ties (Khedmati et al., 2020), stock price information (Ben-Nasr and Alshwer, 2016), accounting conservatism (Ha and Feng, 2018), analysts (Lee and Mo, 2020), employee friendly firms (Cao and Rees, 2020), earning smoothing (Cao et al., 2023), stock liquidity (Ee et al., 2021), etc. This study contributes the literature on the mangers' personal characteristic with human resource investment. Providing the evidence that CEO overconfidence can influence on firms' human resource investment. Building upon existing research by Lai et al. (2021), which concentrates on the impact of CEO's ability,

experience, legal environment, and macroeconomic policies on overconfidence and labor investment, this study enriches the literature by introducing additional dimensions such as CEO's power, age, and aspects of firm development and firm constraint, including firm age and R&D investment. This expansion of focus not only provides a broader understanding of how CEO overconfidence influences labor investment decisions but also considers the internal dynamics of power and personal characteristics of the CEO, alongside the developmental stage and innovation focus of the firm. These additions aim to provide a more comprehensive view of the factors contributing to labor investment efficiency in the context of CEO overconfidence. Overconfidence managers are more interested in their personal interest and risky project and then ignore the feedback based on the human resource, so they cannot evaluate the value of the human resource. However, the value of the human resource already become the important factor of firms' success. This research provides evidence on how the overconfidence managers effect on firm labor investment.

Second, this study adds the literature on the firms' managerial psychological traits effect on the firm performance. Previous researches explore the relationship between firm investment ((Malmendier and Tate, 2005), acquisitions (Malmendier and Tate, 2008), corporate debt (Huang et al., 2016) among others. This research extends on the impact of CEO overconfidence on the labor investment efficiency, demonstrating that encountering overconfidence mangers will lead to either overinvestment or underinvestment. Moreover, this research gives the empirical and theoretical evidence for the firms to recruit executives to enhance corporate governance and improve the human capital resources allocations.

4.2 Literature review

4.2.1 Overconfidence literature review

Humans are subject to a range of cognitive biases in their perception of the world (Kahneman and Tversky, 2000). Overconfidence manager used to overestimate their ability which is already one of the most investigate bias (Griffin and Tversky, 1992; Klayman et al., 1999). "These biases in the overconfidence is one of the most common, it can be defined as "individuals tend to overestimate their ability" (Hill et al., 2012). The definition of overconfidence can be defined into two parts. The first is "better than others". Majority people believe that their skills, abilities and talents from the intelligence and appeal to the driving capability and the possibility of success are better than others (Harrison and Shaffer, 1994; Svenson, 1981; Taylor and Brown, 1994; Weinstein, 1980). The second part is underestimated, which occurs when individuals are asked about their certainty regarding uncertain future state

of the world, people tend to declare an unreasonable degree of confidence (Bazerman, 1986; Fischhoff, Slovic, and Lichtenstein, 1977). The degree and nature of overconfidence may vary from person to person (klayman et al., 1999). “A fundamental idea in social psychology is that people do not only want to make money—they also want to feel good about themselves, and it is hard to feel good about oneself if one is knowingly doing something that is potentially ruinous to others” (Barberis, 2011 p.7).

Roll (1986) first uses the method to explain the frequently observed value-destroying M&A through overconfidence approach. Although the term "overconfidence" is not explicitly mentioned in his work. Roll’s managerial swagger is closely related to the concept of overconfidence that we examined in our research. His "hubris" theory holds that managers are overconfident about the expected gains from mergers and acquisitions, so they overpay for target companies, leading to after-the-fact losses on "successful" deals. Hackbarth (2008) find that "biased" managers tend to use more debt financing than "unbiased" managers because they perceive the company to be more profitable and/or less risky.

CEOs have a significant effect on the company, influencing the quality of information given to investors (Adams and Ferreira, 2007) and the board of directors (Song and Thakor, 2006). Their personal behaviors and information biases can have an effect on the investment decision activity and thus on the firm's performance. Goel and Thakor (2008) indicate the overconfident manager has the highest probability of being promoted to CEO when he is competing with other rational managers. This result provides a possible explanation for firms ending up with overconfident CEOs, despiting the fact that these CEOs make value-destroying investments, and that CEO overconfidence is an empirically detectable attribute. Lots of research focus on the managerial overconfidence. For example, Frank and Goyal (2003) from the financing preference perspective find that managers use internal financing first and then debt is issued when internal financing is exhausted finally issue equity when it is no longer necessary to issue more debt.

March and Shapira (1987) find that managers who find themselves overconfident can develop a false sense of control, expand their empires, underestimate investment risks and overestimate revenues. Heaton (2002) indicates even in the absence of asymmetric information and agency costs, managers are overconfident with respect to cash flow issues related to investments. At different levels of free cash flow, managers' overconfidence leads to underinvestment and overinvestment, respectively. Firms have overconfidence CEOs use to invest more if they have enough money compare with the ration CEO firms. Overconfidence CEOs prefer high return investment, so this made the disagreement with outside investor.

Therefore, they would forbid external equity financing (Malmendier and Tate, 2005). Also, overconfidence effect on decision making on many aspects. For example, firm innovation investment (Hirshleifer, Low and Teoh, 2012), stock price crash risk (Kim et al., 2016), cash holding (Chen et al., 2020), turnover (Campbell et al., 2011), misreporting (Schrand and Zechman, 2012) among others.

4.2.2 Labour investment literature review

In research, human resource is the main cost for the corporate operate, reducing the employment can be used as the main method to lower the cost of the operation (Uchitelle and Kleinfield, 1996). Human resources are kind of intangible asset for the firm, when it helps firm to improve the capability it means it can create the value when it is used in the system (Itami, 1987). Human resources are not easy for reproduce by other firms which make it as a potential source for the competition (Snell, Youndt and Wright, 1996). The difference in employment can be seen as the difference in human resources, which is accompanied by changes in the allocation of human resources to manage employees (Lepak and Snell, 1999). Human capital can be seen as the fundamental of the firm (Lepak and Snell, 1999). When human capital is both valuable and unique, it represents the knowledge base from firm is most likely to shape its strategy (Stewart, 1997). Firms would take strategy when their human capital is unique and valuable (Snow and Snell, 1993). Employees' behaviour can influence the firms' performance and the human resources can affect employees (Huselid, 1995), which indicate the important of the human resource management and have the impact of create firms' advantage (Wright and McMahan, 1992).

Labour is an important factor of production, and labor costs account for about two-thirds of the added value of the entire economy (Hamermesh, 1993). Labor investment can be seen as one of the most important investments due to it increase the competitive advantages (Becker, 1962), and this is more obvious in the modern firms (Zingales, 2000). Belo et al. (2022) indicate that the physical capital precents between 22% to 30% market value in the US at the same time the permanent workforce account for 23% to 27%. The contribution of labor force is familiar to capital, therefore, when discussing business investment should be equated with labor. The number of employees and the physical capital size of investment, obtain the best market value. The best employment and investment determine the company's profit (including employment rent), which in turn determines their market value, as well as the time path of employment and per capita (Merz and Yashiv, 2007). Demand for labour input by firms would adjust slowly in response to shocks, and these adjustments would be affected by financing constraints (Campello et al., 2010). Agency theory indicates that due to the dislocation of

interests between shareholders and managers, managers may chase their own interest and involved in opportunistic activities (Jensen and Meckling, 1976). Besides, because of the information asymmetry, investor and managers hold the different quality of information which may lead to the lemon problem (Baker, Stein, and Wurgler, 2003). Due to information asymmetry impact on investment decision, which lead to overinvestment and underinvestment (Hubbard, 1998). For example, when hire more under performance employees will lead to over investment (Ben-Nasr and Alshwer, 2016), some profitable projects managers have either failed to hire or fired people who are critical to the project will lead to under investment (Ghaly et al., 2020). Managers invest the negative NPV lead to make the over investment and avoid invest on positive NPV lead to under investment (Biddle et al., 2009). Managers may be reluctant to lay off inefficient employees because they like a quiet life and want to avoid difficult decisions and expensive efforts related to layoffs (Bertrand and Mullainathan, 2003).

The labour investment efficiency can be influenced from many aspects. CEO who has closer relationship with independent board members has negative effect on the labour investment efficiency, this is more obvious on the firms which more rely on the skilled labor and struggling on finance, further harm the investors value (Khedmati et al., 2020). High quality financial report can influence the labour investment efficiency due to release the agency conflict and the market friction (Jung et al., 2014). Financial statement comparability can improve the labour investment efficiency through external monitor and internal corporate governance (Zhang et al., 2020). Long-term institutional investors' monitor role can help ease the agency conflict in the company's labor decision-making and reduce over-investment and under-investment. This effect is more pronounced for companies with high labor adjustment costs and human resources (Ghaly et al., 2020). Benmelech et al. (2019) based on Great Depression period, find that credit supply play an important role on the employment, firms that need to refinance maturing bonds have fewer workers than other similar firms, especially when local banks run into trouble and companies cannot easily find alternative sources of external financing. This indicates financial agents make an important role on the labor employment. Ben-Nasr and Alshwer (2016) demonstrate that when managers use more information about stock price will increase the labor investment efficiency. Which indicates managers behaviour can affect firms labour investment.

Firms' labor decision can affect the firms' misstatement risk. The negative unusual employment decision is related to the financial restatements, accounting irregularities, and lawsuits related to accounting fraud, and for auditors need to pay attention on it. However, the positive employment movement only related to the time of audit and restatement (Cao et al.,

2021). The labor employment can show the incremental earnings of firm, because it contains important information about real economic benefits and provide information about the quality of reported earnings (Li, 2011). Firms which contain more skilled employees have more benefit cash holding which means that the labor adjustment costs play an important role in enterprise liquidity management, and the two are complementary (Ghaly et al., 2017). Accounting conservatism decrease the information asymmetry between investors and managers, release the agency problems and further decrease the labor investment inefficiency (Ha and Feng, 2018). Sualihu et al. (2021) find that stock options have intensified inefficient labor investment, while restricted stock relieves the inefficient labor investment.

When top executives face the turnover due to the bad performance, if they make decision to delete the layoffs and wages cut, employee can be an alliance with them to keep their existing status (Pagano and Volpin, 2005). The employee who works close to the head location firms are not able to cut due to the private benefit to the CEO from the employee and community (Landier et al., 2009). In personal, executives are not like to cut the employees because they prefer the quite life (Bertrand and Mullainathan, 2003). Managers have a preference of labor policy, corporate governance play an important role in the Labor market results and CEO is the most important decision maker on corporate governance.

4.2.3 The interaction between CEO overconfidence and labor investment

Overconfidence managers overestimate their ability which harm the firm investment performance and labor investment is one of it. Firm investment policy is affected by lots of reasons, for example the economy environment, macro monetary policies, capital markets, and corporate operations (Richardson, 2006). Managerial factors, such as the irrationality of managers are also important, especially in inefficient financial markets and in firms with poor corporate governance (Malmendier et al., 2011).

Manager overconfidence not only affect the financial decision but efficiency of investment (Malmendier and Tate, 2005). Overconfidence CEOs may overinvest or underinvest in the labor investment (Heaton, 2002; Bares, 2005). This is because they believe their own judge, so they are not willing to accept others suggestion from human resource. The reason for studying overconfident CEOs and labor investment in manpower is because labor is also a very important investment, in human resources and modern corporate governance, the performance of employees is increasingly important, so that an overconfident CEO will insert all kinds of investment, then human resources investment is also one of them. Because CEOs are the firms' decision maker, so their attitude to the human resource would influence on the

investment on this are, which would be further employees' quality. This study argues that firms with an overconfidence CEOs are always think they are better than average.

This paper discusses the relationship between CEO overconfidence and workforce effectiveness. This study believes that overconfident CEOs influence decisions on wage and manpower investment. In terms of human investment, it may be over or under-invested. First, the CEO has a decisive role in corporate decisions. Although there are other executives, the CEO is the ultimate decision-maker in company decisions, and the social psychology literature also shows that overconfident people suffer from what's called explanatory bias. Negative feedback was more likely to be perceived as inaccurate or uninformative than positive feedback. As a result, negative feedback is often explained or ignored.

Taylor and Brown (1988) suggest that this cognitive bias may be necessary in part to maintain overconfidence as a stable psychological trait. Moreover, Taylor and Gollwitzer (1995) find that individuals in the post-decision stage are more susceptible to interpretation bias (and other positive hallucinations) than those in the pre-decision stages. This means overconfident CEOs are more likely to ignore negative feedback in the process of operating their chosen investment than in the stage of selection among potential projects. This interpretation bias, coupled with the illusion that they can control the situation, prevents overconfident CEOs from rationally updating their beliefs in the face of negative feedback, leading them to stick with negative net present value projects for a long time.

Due to the bias of the CEOs' cognition of information, it is very likely that the CEOs will only rely on their personal impression and ignore the negative feedback from human resources when making decisions. Stick with the information agree with. Then this will cause the error of human resource investment. An overconfident CEO can misjudge the company's future because they always have high hopes for the future. So that take a negative net present value. In this case they will hire more staff to achieve their ambitions. Indeed, overconfidence can be said to be a double-edged sword, it can have a positive effect on the innovation of the company and take some actions under the condition of accounting conservatism.

This study predicts that when a CEO is overconfident, his investment in the workforce will have a big impact. Hiring too many people leads to overinvestment, so there is an inefficient correlation between overconfidence and human resources. Overconfident CEOs underestimate the risks of failure and think they are on top of things. They ignore it when there is a clear failure to invest in people. CEOs tend to chase good results because their wealth and status are at stake. However, it is often difficult to evaluate their investment decisions, because there are other factors affecting corporate performance.

4.3 Data and methodology

4.3.1 Data selection

This article is based on the US market and S&P 1500 listed firms. The financial data is from the Compustat and stock information from CRSP from 1994-2021. The CEOs compensation and detail information are from ExecuComp database. Exclude financial industry (two digit SIC (60-69). This is due to the difference of financial firms and their high leverage and sensitive to the risk. All variables are winsorized at the 1% following Jung et al. (2014). The CEO compensation data are from ExecuComp. Then merge all data together.

4.3.2 Measuring overconfidence

The main method is following Malmendier and Tate (2005) using the option as the main variable. Malmendier and Tate (2015) indicate "the most common approach to measuring CEO overconfidence has been to use decisions that the executive makes on his or her personal portfolio of company stock options." However, this study lacks the data about the option exercise. Then using the way of Campbell et al. (2011) and Hirshleifer et al. (2012). Normally CEOs are exposed to the specific risk of the firm since the value of human capital is link to the firms' performance.

$$Per\_option\_value_{i,t} = \frac{Opt_{exer_{val\,i,t}}}{Opt_{exer_{num\,i,t}}} \qquad (1)$$

Where $opt\_exer\_val_{i,t}$ is the value of exercisable but not yet exercised options and $opt\_exer\_num_{i.t}$ is the number of exercisable but not yet exercised options. The data is obtained from ExecuComp. After getting the option value then calculate the CEO overconfidence:

$$Option\ in\ the\ money = \frac{C}{prcc\_f_{i,t} - c} \qquad (2)$$

Where $prcc\_f_{i,t}$ is the stock price at the fiscal year end from CRSP. Following the definition by Malmendier and Tate (2005), the overconfidence CEO is equal to 1 when the option in the money exceeds 0.67 at least twice during the full time period.

4.3.3 Measuring labor investment efficiency

Following the Jung et al. (2014), first calculate the net hire of the firm which is used to show the change in the number of employees (Pinnuck and Lillis 2007). And then calculate the abnormal het hiring. The definition of the abnormal net hiring is the difference between the actual change in a firm's labor force and the expected change of the underlying economic reasons.

First calculate the firms' net hiring to represent the labor investment and then use the absolute deviation of net hiring and expected hiring to measure the efficiency. Using the model by Pinnuck and Lillis (2007) to calculate the net hiring let which include the economic variables such as sales growth, liquidity leverage and profit. Therefore, the estimate of abnormal net hiring reflects a measure that captures the amount of net hiring that cannot be accounted for by potential economic sources.

$$\begin{aligned} Net\_hire_{it} = {} & \alpha_0 + \beta_1 salesgrowth_{it-1} + \beta_2 salesgrowth_{it} + \beta_3 \Delta ROA_{it} + \beta_4 ROA_{it-1} \\ & + \beta_5 ROA_{it} + \beta_6 return_{it} + \beta_7 size\_r_{it-1} + \beta_8 quick_{it-1} + \beta_9 \Delta quick_{it-1} \\ & + \beta_{10} \Delta quick_{it} + \beta_{11} lev_{it-1} + \beta_{12} lossbin_{it-1} + \beta_{13} lossbin2_{it-1} \\ & + \beta_{14} lossbin3_{it-1} + \beta_{15} lossbin4_{it-1} + \beta_{16} lossbin5_{it-1} + \varepsilon_{it} \quad (3) \end{aligned}$$

Where net_hire is the percentage change in employees. Sales_growth is the percentage change in sales revenue, ROA represent the net income dividend by beginning of the year total assets, return is the annual stock return for the year t, size_r is the log of the market value of equity at the beginning of the year and use percentiles to show, quick is the ratio of cash and short term investments plus receivables to current liabilities, leverage is the ratio of long-term debt to total assets at the beginning of the year, lossbin is indicators variables represent each 0.005 interval of prior year ROA from 0 to −0.025. The model also includes industry fixed effects. Definitions for all variables, including Compustat variable names, are also summarized in the Appendix.

4.3.4 Measuring empirical model

To examine the relationship between CEOs' overconfidence and firms' labor investment efficiency, model (4) is following Jung et al., (2014).

$$\begin{aligned} |Ab\_net\_hire|_{i,t} = {} & \alpha + \beta_1 CEO\_overconfidence_{i,t} + \beta_2 ROA_{i,t} + \beta_3 MTB_{i,t} + \beta_4 Lev_{i,t} + \\ & \beta_5 Sale_{i,t} + \beta_6 Loss_{i,t} + \beta_7 OCF_{i,t} + \beta_8 STD\_Cashflow_{i,t} + \beta_9 STD\_Sale_{i,t} \quad (4) \end{aligned}$$

In the regression equation (4), |Ab_net_hire| is follow Jung et al. (2014) represent the absolute value of abnormal net hire, CEO_overconfidence is the measure of the CEO overconfidence follow Malmendier and Tate (2005) and Campbell et al. (2011). ROA is the return on assets, MTB is the market to book ratio, Lev is the leverage due to discipline management of creditors and its impact on the quality of accounting disclosures (Sweeney,1994). OCF is the operating cash flow. Sale is the sale revue. STD_Cashflow is the operating cash flow volatility. STD_Sale is the volatility of the sale revenue.

4.4 Summary statistics

4.4.1 Descriptive statistics and correlation results

This part presents all variables allocated into three groups which is dependent variables, independent variables and control variables. The definition and the method are show as the follow in Table 4.1

Table 4.1 Variables definition and measure

Variable	Symbol	Measure
Dependent variables		
Labor invest	Labor_Invest	Percentage change in the number of employees for the firm i
Absolute net hire	|Ab_net_hire|	Absolute value for the difference between the observed labor investment value and the predicted labor investment value
Independent variables		
Overconfidence	Holder67	Indicator variable has a value of 1 when the option-based measure in Campbell, et al. (2011) exceeds 0.67 at least twice during the full sample period and zero otherwise.
Control variables		
Return on asset	ROA	Net income divided by total assets at the end of the year.
Market to book	MTB	The market value of equity plus the book value of debt divided by the total assets at the end of the year.
Leverage	Lev	The ratio of total liabilities to total assets at the fiscal year end.
Loss	Loss	Indicator variable coded as one if firm i had negative ROA for year t-1.
Standard deviation of cash flow	STD_CFO	Standard deviation of firm i's cash flows from operations (OANCF) from year t-5 to t-1.

Standard deviation of sale	STD_Sale	Standard deviation of firm i's sales from year t-5 to t-1.
Cash flow	OCF	Operating cash flow scaled by total assets
Sale revenue	Sale	Total sale divided by total asset
Age	Age	The current age of CEO
Innovation investment	R&D	R&D investment to total assets
CEO Tenure	Tenure	The length of time for which CEO is running the business.
Firm age	Firm age	The year of the firm established

This study presents descriptive statistics for the variables included all variables. The table 4.2 shows the summary statistics. All the variables are winsorized at 1% level. The control variables including total asset return rate, which is calculate by the net ratio scale by the total asset. Market to book ratio, which is the ratio of the market value of equity to the book value of equity. The mean value of |ab_net_hire| is 0.164 which is similar to the Jung et al. (2014). For the independent variable overconfidence, the mean and the standard deviation are 0.573 and 0.495 respectively, similar to Campell et al. (2011) and Hirshleifer et al. (2012). The average value represents the proportion of annual observations of companies managed by overconfident (or not overconfident) managers. All the definition are listed in Appendix.

Table 4.2 Descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
|Ab_net_hire|	52,474	0.164	0.320	1.21E-06	5.938
Holder67	56,035	0.573	0.495	0	1
Lev	100,507	0.244	0.283	0	3.105
MTB	99,356	2.771	5.423	-25.867	37.538
Sale	100,762	0.831	0.799	0	4.984
ROA	100,766	-0.054	0.421	-6.581	0.362
STD_CFO	95,501	0.098	0.322	0.002	5.754
STD_Sale	98,330	0.151	0.203	0	1.709
OCF	98,890	0.019	0.292	-4.583	0.413
Loss	100,787	0.301	0.459	0	1

Note: This table describes the summary statistics. The year duration is from 1994-2021 in US firms. And the data is from the Compustat and ExecuComp. Independent variable Holder67 follow (Cambell et al., 2011) is the dummy variable equal to 1 when is managed by overconfidence CEO twice, otherwise 0. |ab_net_hire| is the dependent variable follow Jung et al. (2014). All variable is winsorized at 1% level. The definition is showed at Appendix.

Table 4.3 PW correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
|Ab_net_hire|	1						

Holder67	0.055	1					
ROA	-0.104	0.036	1				
Lev	0.027	0.013	-0.273	1			
MTB	0.015	0.073	0.025	-0.109	1		
Loss	0.115	-0.055	-0.397	0.066	0.04	1	
STD_CFO	0.133	-0.006	-0.505	0.124	0.023	0.219	1
STD_Sale	0.092	-0.034	-0.121	0.044	0.060	0.147	0.184
OCF	-0.113	0.032	0.844	-0.212	0.021	-0.354	-0.529
Sale	-0.108	-0.054	0.078	0.015	0.0366	-0.043	-0.039
	(8)	(9)		(10)			
STD_sale	1						
OCF	-0.081	1					
Sale	0.542	0.147	1				

The Pearson pairwise correlation regression shows that the correlation between overconfidence and the ab_net_hire is significant at the 1% level the result is similar to Lai et al. (2021), which means the overconfidence CEO would lead to lower investment efficiency. The results note that most control variables are significantly correlated at low to moderate levels, which alleviates concerns about potential multicollinearity issues.

4.5 Regression results

The table shows the regression results of relationship between CEO overconfidence and the labor investment efficiency. Column (1) contain full sample. The results show that the relation between CEO overconfidence and labor investments is positive and significant at 5% level. This means the CEO overconfidence make ineffective on labor investment. The column (2) shows the relationship between CEO overconfidence and labor investment at overinvestment level. The relation is significant at 5% level which means overconfidence CEOs are willing to over invest the human resource. However, the column (3) in underinvestment group shows the negative significant relationship at 1% level, this means in the underinvestment in labor firm overconfidence show a negative significant influence. For the control variables, the sales, cash flow, is negative significantly related to labor investment, this means firms with good sales and cash flows labor investment is more efficiency. The leverage, market-to-book ratio, loss and volatility of sale and cash flow show the positive significant relationship with labor investment. This means this type of firm has worse LIE.

Table 4.4 The relationship of CEO overconfidence and abnormal net hiring

	(1) Overall	(2) Over	(3) Under
Holder67	0.011**	0.035**	-0.010***

	(2.106)	(2.184)	(-4.220)
ROA	0.010	-0.030	-0.037**
	(0.473)	(-0.527)	(-2.077)
MTB	0.002***	0.003**	-0.000
	(4.332)	(2.177)	(-0.564)
Lev	0.059***	0.172***	-0.014
	(3.207)	(3.545)	(-1.111)
Sale	-0.130***	-0.232***	-0.023***
	(-10.447)	(-7.513)	(-4.588)
OCF	-0.073**	-0.083	-0.010
	(-2.043)	(-0.881)	(-0.321)
STD_CFO	0.248***	-0.015	0.248***
	(3.153)	(-0.092)	(3.436)
STD_Sale	0.220***	0.321***	0.071***
	(9.158)	(6.002)	(6.801)
Loss	0.028***	0.033	0.026***
	(3.498)	(1.417)	(7.133)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Cons	0.220***	0.343***	0.123***
	(16.729)	(9.870)	(18.143)
Rsquared	0.208	0.354	0.307
N	32940	10701	21693

Notes: T statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. All variables define at Appendix C. Industry and year effect are controlled.

4.6 Robust test

For the robust test, dependant variable by using labor productivity to instead. The labor productivity is measuring as total sales divided by the total number of employees. The table shows the regression results of the test. From the table finds that coefficient of result is significant and positive. This means the overconfidence CEOs are positive related to the inefficient labor investment. This result is related to the main test. The lagged overconfidence also shows the positive relationship with labor investment. Overall, the results show the positive significant relationship between overconfidence and labor investment efficiency. The results have been demonstrated that conclusions are not restricted to a specific metric of workforce productivity.

Table 4.5 Robust test

	(1) Labor productivity	(2) Labor productivity
Holder67	35.50***	
	(5.58)	
Holder67(lag)		32.99***
		(4.91)

ROA	46.63	49.72
	(1.52)	(1.56)
Loss	-54.04***	-56.18***
	(-6.87)	(-6.85)
MTB	-1.255*	-1.109
	(-2.04)	(-1.75)
Lev	136.0***	139.1***
	(3.97)	(3.89)
OCF	294.0***	309.7***
	(5.3)	(5.31)
Sale	119.6***	118.1***
	(12.59)	(12.05)
STD_CFO	42.65	58.1
	(1.04)	(1.35)
STD_Sale	627.6***	664.6***
	(12.8)	(12.48)
Rsquared	0.2874	0.2886
Year FE	Yes	Yes
Industry FE	Yes	Yes
Cons	-230.1***	-225.3***
	(-8.09)	(-7.72)
N	44098	41803

Note: Robust standard errors in parentheses. ***, **, * signify significance at the 1%, 5%, and 10% levels, respectively. All variables are defined at Appendix C. Industry and year effect are controlled.

4.7 Endogeneity test

In this part by considering the endogeneity issue. To account this by using the 2sls method, in the using the industry mean of the overconfidence CEO as the instrument variable to generate the predict Holder67. The idea is that the high industry mean of CEO overconfidence means that a firm is more likely to have an overconfidence CEO, but this is not mean that with worse labor investment decision. In the second step using the predict_holder67 replace the holder_67. The results are at the table 4.6. From the table, it can be observed that the results are consistent with the main regression findings. This indicates that overconfident CEOs lead to inefficient labor investments.

Table 4.6 2sls test of endogeneity

	(1)	(2)
	First stage	Second stage
Industry average holder67	1.057***	
	(36.68)	
Predict_holder67		0.080***

		(4.51)
ROA	-0.018	0.022**
	(-1.14)	(3.22)
MTB	0.006***	0.001
	(13.23)	(1.86)
Lev	0.0425***	0.008
	(4.25)	(1.48)
Loss	-0.086***	0.054***
	(-13.91)	(14.97)
STD_CFO	-0.016	0.091***
	(-0.67)	(11.77)
STD_Sale	0.0435**	0.244***
	(2.93)	(30.96)
OCF	0.215***	-0.0710***
	(9.46)	(-6.74)
Sale	-0.0213***	-0.0535***
	(-6.66)	(-27.46)
Rsquared	0.039	0.049
Cons	-0.0455**	0.117***
	(-2.63)	(11.47)
N	52535	56338

Note: T statistics in parentheses. ∗p < 0.1, ∗∗p < 0.05, ∗∗∗p < 0.01. All variables are defined at Appendix C.

4.8 Additional test

After examining the role of overconfident CEOs in decisions related to a firm's human capital, The test delves further into their influence. A CEO's power significantly affects corporate investment decisions in many aspects. Powerful CEOs are negatively associated with investment efficiency, primarily due to their tendency to overinvest rather than underinvest (Adams et al., 2005; Li et al., 2019). Bebchuk et al. (2011) suggest that firms with powerful CEOs exhibit worse operating performance and lower market valuation. Ali and Zhang (2015) discover that new and experienced CEOs may display different behaviors, specifically, CEOs in the initial years of their tenure are highly motivated to report positive performance to stakeholders. In other words, CEOs with shorter tenures are more likely to engage in opportunistic reporting. A CEO's managerial power can be inferred from their compensation, ownership, direct ties, and tenure (Göx and Hemmer 2020; Harford and Li 2007; Huang et al., 2009; Khedmati et al., 2020).

4.8.1 The impact of cash flow on CEOs overconfidence and labor investment

Zeng and Wang (2015) indicate the cash holdings has significant influence on firms' decision-making. Therefore, under that this study examines managerial power from two perspectives: cash flow and tenure, to test whether managerial authority affects the relationship between overconfident CEOs and labor investment. First, based on the median annual operating cash flow, divide sample companies into low cash flow and high cash flow groups. A company is classified into the high (low) cash flow group when the ratio of its cash and equivalents to total assets is higher (lower) than the annual median.

The results of the regression are displayed in columns (1) and (2). From the table, results show that a company's cash flow does not influence the human capital decisions of overconfident CEOs. This is means, regardless of whether the cash flow is high or low, the relationship between overconfident CEOs and labor decisions is not significant. This outcome suggests that when a company's CEO is overconfident, decisions related to labor do not change in an environment with substantial cash holdings. Overconfident CEOs tend to be optimistic about their decisions and the company's prospects. This optimism may lead them to believe that investing in human capital, such as hiring more employees or raising wages for existing employees, so no matter the situation of the company's cash holdings is not going to affect their decisions. Overconfidence can lead to misjudgements about market conditions or economic conditions. The CEO may overestimate the financial stress the company can withstand, or underestimate the impact of a recession, and therefore may make labor investments at inopportune times.

Table 4.7 The cash flow influence

	(1) Low NCF	(2) High NCF
Holder67	0.004	0.008
	(0.51)	(1.37)
ROA	0.099*	0.007
	(2.09)	(0.41)
MTB	0.001*	0.002**
	(2.27)	(2.86)
Lev	0.052	0.058*
	(1.87)	(2.43)
Loss	0.033**	0.016*
	(2.86)	(2.01)
STD_CFO	0.166*	0.099
	(2.04)	(1.75)
STD_sale	0.290***	0.166***
	(7.37)	(5.57)

OCF	-0.083	-0.030
	(-1.80)	(-0.63)
Sale	-0.163***	-0.089***
	(-8.18)	(-6.32)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Cons	0.257***	0.195***
	(11.67)	(12.56)
Rsquared	0.136	0.267
N	18085	16474

Note: T statistics in parentheses. ∗p < 0.1, ∗∗p < 0.05, ∗∗∗p < 0.01. All variables are defined at Appendix. Low NCF is the cash holding below the industry median. High NCF is the cash holding over industry median.

4.8.2 The impact of tenure on overconfident CEOs and labor investment

Next, by using the tenure of the CEO as a representation of the CEO's power. Previous studies have mentioned that the longer the tenure of the CEO, the closer their relationship with the board of directors (Harford and Li, 2007). Following Ali and Zhang (2015), this study utilizes tenure as a proxy for managerial power, incorporating this variable into the regression, which is calculated based on the number of consecutive years the CEO has served. By dividing the CEOs' tenures into two groups, namely long tenure and short tenure. CEOs with a tenure longer than the annual median are categorized as having a long tenure, while those with a tenure shorter than the annual median are categorized as having a short tenure.

From the table, the results show that the relationship between overconfident CEOs and labor investment is not significant, both in cases of short and long tenures. This indicates that overconfident CEOs' decisions regarding labor investment are not influenced by the length of their tenure. Because overconfident CEOs tend to overestimate their judgment and decision-making capabilities and are optimistic about the future, the duration of their tenure does not affect their decisions on labor investment. Therefore, they rely more on their overestimated abilities rather than considerations of tenure length. Labor investment decisions are often influenced by a variety of factors, including market opportunities, technological advances, competitive pressures, and the specific needs of a company. Overconfident CEOs may make decisions based on these external factors and personal confidence in the company's capabilities that have little to do with the length of their tenure.

Table 4.8 The tenure influence

	(1)	(2)

	Low tenure	High Tenure
Holder67	0.012	0.001
	(1.56)	(0.14)
ROA	0.021	0.050*
	(1.01)	(2.06)
MTB	0.001	0.003***
	(1.55)	(3.96)
Lev	0.058*	0.056
	(2.39)	(1.89)
Loss	0.026**	0.021*
	(2.63)	(2.2)
STD_CFO	0.061	0.095*
	(1.21)	(2.39)
STD_sale	0.261***	0.163***
	(6.84)	(6.52)
OCF	-0.053	-0.051
	(-1.16)	(-1.75)
Sale	-0.143***	-0.111***
	(-6.50)	(-8.11)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Rsquared	0.250	0.232
cons	0.245***	0.216***
	(10.5)	(12.53)
N	17784	15692

Note: T statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. All variables are defined at Appendix. Low tenure is below the industry median. High tenure is the tenure over industry median.

4.8.3 Through the R&D investment

Innovation within a company is inseparable from labor and talent. The recruitment and training of highly skilled personnel increase the enterprise's wage and labor costs. Therefore, the higher the investment in innovation, the higher the labor adjustment costs. The impact of innovation investment on corporate competitiveness is long-term, and innovation investments are characterized by their irreversibility, riskiness, and resource intensity, adding complexity to the process (Zhang, 2023). According to Ghaly et al. (2020), this study assesses the level of research and development (R&D) investment by using the ratio of R&D spending to total assets. Based on median values calculated for each industry and year, we classify the sample into two categories: high and low R&D investment.

From the table, the results show that the relationship between overconfident CEOs and labor investments are not significant, both in groups with high research investment and in those with

low research investment. This indicates that innovation investment does not influence CEOs' decisions regarding human resources. Overconfident CEOs may have a higher tolerance for risk, leading them to actively invest in research and development in anticipation of high returns. This risk tolerance might not extend to labor investment, which is often considered a fixed cost. CEOs might prefer to invest in areas they believe will provide the company with a competitive advantage through innovation, rather than expanding the workforce. Overconfident CEOs believe in their ability to generate substantial returns from specific projects (such as new product development or market expansion) through R&D spending, viewing these as strategic investments, while treating labor investment as a separate operational decision.

Table 4.9 The impact of R&D investment

	(1) Low R&D investment	(2) High R&D investment
Holder67	0.012	0.002
	(1.43)	(0.23)
ROA	0.067*	0.011
	(2.31)	(0.43)
MTB	0.003**	0.001
	(2.97)	(1.12)
LEV	0.067*	0.021
	(2.25)	(0.71)
Loss	0.026*	0.035***
	(2.14)	(3.99)
Sale	-0.123***	-0.081***
	(-6.70)	(-5.31)
OCF	-0.164**	-0.002
	(-2.92)	(-0.04)
STD_CFO	0.385***	0.133*
	(4.13)	(2.16)
STD_Sale	0.231***	0.193***
	(7.36)	(4.16)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Cons	0.220***	0.168***
	(10.26)	(11.11)
Rsquared	0.299	0.235
N	13189	7786

Note: T statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. All variables are defined at Appendix. Low R&D investment below the industry median. High R&D investment is the investment over industry median.

4.8.4 Age effect of CEO overconfidence and labor investment efficiency

People's overconfidence is influenced by age, so this study divides CEO age into three groups: age less than 40, age between 40 and 50, and age greater than 50. When CEOs are over 50 years old, they are closer to retirement, so they tend to choose risk aversion (Vroom and Pahl, 1971). Hitt and Tyler (1991) find that the age of top executives impacts the strategic evaluation of acquisition candidates. Research indicates that as individuals age, their flexibility diminishes, while rigidity and resistance to change intensify. For older executives, financial and career security may become more crucial, prompting them to eschew risky decision-making (Carlson and Karlsson, 1970). Conversely, younger managers are often more inclined towards taking risks. A lower managerial age has been linked to company growth (Child, 1974), as well as to fluctuations in sales and returns (Hart and Mellons, 1970). From the table, it is evident that among the three age groups, CEOs in the middle-aged category show significant overconfidence in labor investment at the 5% level, suggesting that overconfident middle-aged CEOs may lead to less efficient labor investment. This is due to middle-aged CEOs possessing a certain level of experience and a history of success, which exacerbates their overconfidence. They believe they have a profound understanding of human resource management. Therefore, they make labor investment decisions without adequate risk assessment. At the same time, they underestimate risks, making labor investments at inappropriate times, thus leading to inefficiency.

Table 4.10 The age characteristic of CEO overconfidence and labor investment

	(1) Age=0	(2) Age=1	(3) Age=2
Holder67	0.029	0.023**	-0.001
	(0.73)	(2.83)	(-0.34)
Lev	0.032	0.021	0.020
	(0.23)	(1.18)	(1.81)
MTB	0.010	0.002*	0.010**
	(1.86)	(2.2)	(2.69)
Sale	-0.099***	-0.039***	-0.063***
	(-3.67)	(-3.83)	(-14.07)
STD_Sale	0.532***	0.194***	0.320***
	(3.58)	(4.01)	(12.46)
ROA	-0.081	-0.017	0.025
	(-0.72)	(-0.86)	(1.43)
OCF	-0.092	-0.154**	-0.108***
	(-0.68)	(-2.59)	(-4.23)
STD_CFO	-0.514	0.171	0.077
	(-1.32)	(1.13)	(1.93)
Loss	-0.019	0.035**	0.038***

	(-0.36)	(3.05)	(5.38)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Rsquared	0.294	0.083	0.064
Cons	0.226*	0.565	0.127***
	(1.99)	(1.65)	(9.73)
N	408	7070	25995

Note: T statistics in parentheses. ∗p < 0.1, ∗∗p < 0.05, ∗∗∗p < 0.01. Age is referred to overconfidence CEO. Age=0 is the group under 40. Age=1 is the group between 40 and 50. Age=2 is the group over 50. All variables defined in Appendix.

4.8.5 The role of financial constraint

Cleary (2006) indicates that companies that pay dividends exhibit stronger sensitivity to cash flow investment. Furthermore, recent empirical studies that categorize firms based on dividend payment, company age, size, and other constraints have also discovered similar outcomes. Therefore, this segment of research investigates the impact of a company's age on labor investment. Table 4.11 shows the influence of firm age on labor investment efficiency, following Huang and Tarkom (2022), the firm age divided into two group. Young firm indicate that the firm established less than the industry median, and the mature firm means the age over the median. Form the result, this study finds that the overconfidence and labor investment is significant at the 5% level at the young firm. This suggest that at the young firm, overconfidence CEOs the impact on inefficient workforce investment is more significant. However, in mature companies, overconfident CEOs do not lead to inefficiency in labor. This indicates that when a new company has an overconfident CEO, the efficiency of decisions related to labor decreases. This is because overconfident CEOs overly believe in their ability to drive success through rapid expansion and innovative strategies. At the same time, young firms often more flexibility in allocating resources and lack of mature processes in hiring and experience leads to inefficient allocation of labor. New firms tend to be more focused on innovation and rapid growth, and overconfidence CEOs may believe that by investing in specific talent and skill, these goals can be achieved quickly.

Table 4.11 The role of firm age on labor investment

	(1) Young firm	(2) Mature firm
Holder67	0.028**	-0.002
	(2.81)	(-0.30)
MTB	0.003**	0.001**
	(2.66)	(2.93)

Lev	0.072**	0.043
	(2.67)	(1.84)
ROA	0.011	0.027
	(0.34)	(1.27)
Loss	0.025	0.029***
	(1.83)	(3.48)
OCF	-0.067	-0.038
	(-1.34)	(-1.00)
STD_CFO	0.142**	0.142
	(3.16)	(1.67)
STD_Sale	0.221***	0.212***
	(6.67)	(7.09)
Sale	-0.154***	-0.123***
	(-7.27)	(-7.06)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Rsquared	0.263	0.187
Cons	0.245***	0.221***
	(11.74)	(11.29)
N	14593	18606

Note: T-statistics in parentheses. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. all variables are defined at Appendix C. Young firm is the firm's age below the industry median. Mature firm is the firm's age over industry median.

4.9 Conclusion

This study examines the impact of CEO overconfidence on labor investment efficiency, and the results indicate that companies with overconfident CEOs are more likely to experience lower levels of labor investment efficiency. To address potential endogeneity issues, utilize two-stage least squares, and the findings demonstrate robustness. By further grouping CEO's overconfidence into power (tenure and firm cash holding), firm R&D investment, financial constraint (firm age) and CEOs characteristics (age). by splitting the cash flow into two parts, above and below industry cash flow, and the results unable to detect the impact of overconfidence. Similarly, for tenure, by splitting into two groups, above and below the median industry tenure, again failing to find the effect of overconfident CEOs on workforce investment. Then look at companies investing in innovation and cannot find any impact. When looking at the age profile and financial constraints of CEOs, the results show that middle-aged CEOs are more likely to make inefficient workforce investments. And younger firms have an impact on workforce investment. People's overconfidence level would increase when their age increase but when become old managers become risk averse. For the firm constraint (firm age), the result shows that the young established firms are influenced by the overconfidence CEOs. This

is due to the time of establish lack of the systematic corporate governance. Overall, the findings suggest that overconfident CEOs can influence not only investment behaviour such as financial investment, M&A and cash holding, but also workforce. This result shows there is a negative effect between CEO overconfidence and company's human resource development.

Furthermore, this study sheds light on the importance of considering factors such as age and financial constraints in understanding the impact of CEO overconfidence on labor investment efficiency. Because this study finds that middle-aged overconfident CEOs tend to create a more inefficient workforce investment. Additionally, young firms result in more inefficient investment. Therefore, companies need to be aware of the potential moderating effects of age and corporate governance system when considering the impact of CEO overconfidence on labor investment efficiency.

This study also contributes to the broader literature on CEO behavior and its impact on company performance. By examining the relationship between CEO overconfidence and labor investment efficiency, this research provides new insights into the mechanisms through which CEO behavior can impact the effectiveness of a company's human resource management. This is particularly important given the critical role that human resources play in a company's success and the potential long-term negative effects of inefficient workforce investment.

Overall, this study highlights the importance of considering CEO behavior, particularly overconfidence, in understanding company performance and the importance of effective human resource management. We hope that our findings will contribute to a better understanding of the factors that influence labor investment efficiency and help companies to make more informed decisions regarding their workforce investment strategies.

For enterprises, it is necessary to properly deal with the relationship between overconfident CEOs in some decisions of the company to achieve functional complementarity. The board of directors should supervise the decision-making process, and an external audit firm should be hired to conduct the audit. Timely and transparent disclosure of the company's hiring and recruitment information. Accept oversight from regulators and investors to improve decision-making efficiency. Boards can specify frameworks to balance the risk regulation of overconfident CEOs. Review major investment decisions or establish structured feedback mechanisms. Ensure that more input and suggestions are accepted in decision making.

For government regulators, after fully understanding the personality characteristics of CEOs, they can specify regulatory policies to reduce risks. For example, specify more stringent disclosure requirements when it comes to significant human capital investments. It also

designates penalties to identify potentially risky behaviors caused by overconfident CEOs and never intervenes before those behaviours have had an impact on the market. The CEO's role in a company's financial and human investment should be fully recognized. For overconfident CEOs, they are more optimistic. Through these concrete, actionable facts, this study not only contributes to the theoretical understanding of CEOs overconfidence and its effects. It also provides practical tools and strategies. This method has not only academic value but also practical value.

Chapter 5 Conclusion

The objective of this paper is to investigate the personal attributes of CEOs and their decision-making, employing a study of the US market as the basis for integration through three distinct articles. It scrutinizes the personal traits of CEOs and the resultant performance of their firms, analyzing the impact of CEO personalities on corporate decisions and performance of U.S. public companies from 1994 to 2021. This section recapitulates the findings and contributions from the preceding three chapters, leading to the final purpose and significance derived from the earlier research. It identifies the limitations and shortcomings of this study, offering recommendations and outlining prospects for future research endeavors.

5.1 Key findings of research

This paper presents a summary of the findings from three core chapters. The study proposes a relationship between the personal characteristics of the chief executive officers (CEOs) and the company's accounting information and human capital investment, as well as the interconnectedness within these processes. The research delves into the complex interplay between CEO traits and how they influence corporate accounting practices and investment in human resources, shedding light on the dynamic nature of this relationship.

In the first paper, using systematic literature review provides a comprehensive overview of the existing research on a particular topic, ensuring that no relevant studies are overlooked. By following a structured and rigorous process, the systematic literature review ensures the validity of the research by reducing the risk of bias and subjectivity. The systematic literature review helps to identify the most robust and reliable evidence, providing a strong foundation for making evidence-based decisions. Also provides a synthesis of existing research, helping to identify gaps in the literature and highlighting areas for further research. Provide transparent and can be replicated, increasing the reliability of the research findings.

It mainly finds out the current research trend and what can be added through systematic literature review. Through the use of traditional methods, input keywords in the three literature websites, namely Web of Science, Business Source Premier and Scoop. By limiting the specific journal year, language and field, first determine the total number of articles. Then by reading abstracts, keywords and introduction of the remaining 214 articles, and then by classifying these articles by research, regional research methods and research content to find the median and mode of these articles. This study finds that although the content of CEO has

existed for many times, there are still few new content to be discovered, and the CFO is not the focus of the academic field. This is despite the fact that the CFO has become more prominent in the company. Because if the CFO does something wrong, such as accounting fraud or fraud, it can be a huge blow to the company. The first paper finds the current trend of the paper and the aspects that could be further improved in the specific literature through specific systematic literature search methods. The research finds that most articles are still concentrated in developed regions, while articles on emerging markets are not particularly abundant. In terms of methodology, the research finds that most of them focused on quantitative methods. The findings in the first article provided researchers with a new idea. At the same time, it provides a new perspective for institutional managers. It can also give regulators a new insight of knowing exactly what influences the code of conduct at the top of a company.

After reading and comparing, there are still some gaps that can be studied in terms of the personality traits of company executives and the accounting investments of companies. Therefore, according to the conclusion of the first article confirm the direction of future research, which is to what extent the personality characteristics of the company's management affect the comparability of the company's financial statements.

The second article is based on the search results of the first article. The main content of the second article is to calculate the relationship between the overconfidence of CEOs and accounting comparability. Based on the CEOs due to their important role at the corporate governance. In a company, the CEOs are mainly responsible for the strategic decisions of the company. Although they are not direct responsible for the financial report, however the financial policy needs to check by CEOs, ensure that the company is in a healthy financial position. Previous research find overconfidence managers will overestimate the firms future return, so they tend to delay loss recognition and generally use less conservative accounting (Ahmed and Duellman, 2012).

Overconfident managers will tend to delay loss recognition and generally use less conservative accounting. Therefore, this study expecst that overconfident management will also have an impact on the comparability of accounting information. Normally, they are too optimistic about their future prospects and too confident in their own abilities that they are unlikely to accept others' suggestions and have use their own one. This situation may lead some external investors to experience difficulties due to insufficient investment information. Similarly, external auditors may face challenges as well. This is not a benefit news for them, as they also lack more comparabl data to audit companies effectively. Furthermore, this can

influence board decisions. CEOs overconfidence can impact the level of accounting comparability in several ways. First, overconfidence can lead CEOs to employ overly optimistic assumptions and projections in financial reporting. This may result in the disclosure of earnings that are neither accurate nor reliable, thus diminishing the comparability of financial statements across companies.

Additionally, CEO overconfidence can also lead to a disregard for accounting standards and practices. When CEOs believe they can achieve their financial goals without adhering to strict accounting standards, they may overlook important details or choose to ignore regulations that would negatively impact their reported earnings. This can create significant disparities in financial reporting between companies and reduce comparability between them.

Furthermore, CEO overconfidence can also impact the level of transparency in financial reporting. When CEOs are overly confident in their ability to achieve their financial goals, they may be more likely to engage in opaque or non-standard reporting practices, reducing the comparability of their financial statements with those of other companies.

In summary, through the second paper, research finds the positive significant relationship between CEO overconfidence and financial statement comparability. And the result is still significant and positive after the robust and the endogeneity check. For the company with strong outside monitor audit, the overconfidence of CEOs and comparability of accounting report is more significant this indicate that CEOs are willing to use more comparable accounting report. However, their influence is more significant at the weak analyst forecast. For the weak inside corporate governance, overconfidence CEOs are showing a significant influence on the comparable financial statements. Consider the other characteristics (age and gender), CEOs are not showing any influence related to the financial statement comparability.

In the third study, continue to explore the influence of corporate leadership's overconfidence on decision-making, shifting the focus from traditional accounting to study human resources. This is because human resources play an increasingly important role in modern enterprises. And the previous articles confirm that overconfidence in a CEO can have an impact on firm investment and financing (Malmendier and Tate 2008; Malmendier and Yan, 2011). Therefore, the third research start with another dimension of corporate investment, which is human resources investment. Human resources are critical for modern enterprises. For companies to remain unbeatable in the competition of modern society, it is essential to focus on investing in their employees. The primary reason for studying the relationship between overconfidence and labor investment is that overconfident managers often struggle to accept others' opinions.

Consequently, when they commit to a course of action, they tend to favor certain types of investments, such as riskier investment projects or mergers and acquisitions, potentially overlooking the crucial investment in human resources. It may result in under-investment in human resources, in which case the company may have no one available. Because of the overconfident expectation of the company's future, the CEOs may make a lot of recruitment to cope with the future performance. However, when the future performance cannot match the CEOs' expectation, the problem of overinvestment will be caused, and the company's resources will be wasted, resulting in a waste of resources.

Through the analysis, the third research finds that CEOs overconfidence can have a significant impact on labour investment. Specifically, overconfident CEOs have a significant impact on ineffective labor investment. After the robust and endogeneity check, this result is same with the main test. Overconfidence CEOs are more likely to make impulsive decisions and invest heavily in new projects, often without considering the long-term consequences. This can result in a lack of resources being allocated to existing operations and labour investment, leading to reduced productivity, lower employee morale, and potential layoffs.

Moreover, using the additional test through CEO power, firm R&D investment, financial constraints and CEO age. The research finds that CEOs' power and the company's innovation investments have no relationship with firm workforce investment decisions. The establish time of the company and the age of the CEOs influence labor investment. In the middle age group the result is significant. This study also finds that young age companies OC CEOs are more ineffective on the labor investment decision. This may be due to the human resource system is not complete compare with the mature firms. Overconfidence CEOs may ignore or dismiss the opinions of others, including their management team and labour force, resulting in poor decision-making and a disregard for the well-being of employees. This can lead to a decrease in employee satisfaction, turnover, and overall job performance.

5.2 Research contributions

In the first paper, expands the research area from personal characteristics to compensation. The research area not only the CEO but also involve the CFO. Zheng (2012) compare how CEOs overconfidence and CFOs overconfidence impact on firms' financial and non-financial decision and find that CFOs overconfidence have more effect on firms' financial policies where CEOs' effect significant on non-financial decision. First study shed the light on the role not over one person but more the executives. Besides, this research gives the idea to the investors and regulators potential influence on the firm performance. Identify the current

trends within the paper and highlight areas for potential improvement in the specific body of literature through targeted systematic literature search techniques.

In the second article, examines the level of confidence of CEOs and the comparability of companies' accounting standards. According to available knowledge, the second article is the first paper based on the overconfidence and financial statement comparability based on the US market. First, this study adds the literature of the managers' overconfidence on financial statements. Second, adding the literature on financial statement comparability, the majority of articles use the financial comparability as the independent variables, e.g., Kim et al. (2016), Choi et al. (2018). However, this article uses the variable as the dependent variable explore the managers' characteristics effect on the comparability. Finally, this research provides the view that CEO's influence not only on the firm investment and decision-making but also on the financial reports.

In the third article, explores the overconfidence CEOs' influence on the human resource. First, this study adds to the article on CEO overconfidence by examining the relationship between overconfidence and workforce investment. In addition to the proven effects on investment, corporate innovation, corporate accounting conservatism, and so on. Second, this research adds the literature on the labor investment efficiency. Previous have research on financial report (Jung et al., 2014), CEO director ties Khedmati et al. (2020) among others. CEO overconfidence has implications for public policy, specifically the adverse effects on resource allocation across the entire economy, resulting from the deterioration of corporate-level information quality.

5.3 Research limitations

First, this paper focuses on the U.S. market, and there is no research on markets outside the US, especially some emerging markets, which are more valuable to study. Similarly, this paper studies the chief executive officers, in fact, other leadership levels within the company become increasingly important, such as CFOs are seen as the second important person in the firm, in addition to regularly disclosing financial results, the CFO and CEO often appear together in public to comment on the company's development (Hoitash et al., 2016). The role of CFOs has changed a lot, since the SEC ask both CEO and CFO disclosure the compensation, CFOs are not just focus on financial statement but take part in the firms' decision. The focus on the CEO can lead to a narrow perspective that overlooks the contributions of other key players in the organization. At the same time, this article does not involve the top management

team. According to the upper echelons theory, the senior management team can also affect the business performance of the company.

Second, regarding the research methodology, when empirically testing the impact of CEO personal characteristics on the comparability of financial statements and labor investments, by using a grouped test and OLS method. Other methods can be used to examine individual characteristics, which may lead to different conclusions. In endogeneity tests, the primary approach used is the 2SLS method. Other methods, such as GMM, can also be employed for validation.

Third, in the first paper using the keywords and limited journals for the research may contain the limitation. the use of only keywords in research can limit the scope of the study as it may not capture all the relevant information or nuances of the topic. The main papers come from three academic websites, so there will be some papers that are not included. Since the first article selected three and four star articles in the ABS ranking, there are some limitations in the number of studies. Some distinctive papers in the same research field are not analyzed because they are published in lower-ranking journals. Another point is that because the paper analyzes a specific field, papers in other fields are not included in the analysis.

5.4 Future research

In the future research will provide a more comprehensive and diverse understanding of the economic and financial trends that shape the research area. Moreover, the role of central banks and regulatory bodies in shaping the financial landscape will also be explored in greater detail. Another important area of future research will be the examination of the impact of geopolitical events such as trade wars, natural disasters, and pandemics on financial markets and economies. Overall, the aim is to provide a comprehensive understanding of the global financial landscape and to inform and support policy-making and investment decisions.

In the future hope enlarge the area of the managers. For example, board of directors, examining the role they play in shaping corporate strategy and decision-making. This will also delve into the impact of diversity and gender representation on board performance and how it affects company success. Additionally, the study of corporate governance practices and the effects they have on financial performance will be explored in greater depth.

Further research also explores the influence of CFO characteristics to the firm performance. In recent years, an increasing number of studies have begun to explore the impact of CFOs on firm development. They have been endowed with more functions, such as disclosing high-

quality financial statements alongside the CEOs (Hui and Matsunage, 2015). At the same time, they also actively participate in the company's decision-making processes and evaluate strategies. Chief financial officers (CFOs) are involved in the company's financial reporting more than other executives. Especially after the introduction of the Sarbanes-Oxley (SOX) Act, their role has become even more significant. Given their familiarity with financial statements, they exhibit more professional skills in strategies related to finance.

Further research will also focus on the integration of sustainability and corporate social responsibility into the corporate strategy and decision-making process, and its impact on financial performance and stakeholder relations. This will include a detailed examination of the implementation of sustainability initiatives and the role of the management team and board of directors in driving these initiatives forward.

Moreover, the impact of technology and innovation on corporate strategy will also be a central theme in future research. This will include a study of how companies are adapting to the fast-paced technological landscape and how technology is influencing the way companies do business. The impact of digitalization on corporate strategy and how companies are leveraging technology to remain competitive will be of particular interest.

Overall, future research will aim to provide a deeper understanding of the role of management teams and boards of directors in shaping corporate strategy and decision-making, and their impact on corporate performance and success.

Appendix A Name and number of journal article

Name of journal	Number
Abacus	3
Academy of Management Journal	5
Accounting Forum	2
Accounting Horizons	7
Accounting Review	35
American Economics Review	1
British Accounting Review	1
Contemporary Accounting Research	17
European Accounting Review	5
European Journal of Finance	2
Financial Management	1
International Journal of Accounting	4
International Review of Financial Analysis	1
Journal of Accounting and Economics	16
Journal of Accounting and Public Policy	10
Journal of Accounting Auditing and Finance	11
Journal of Accounting Literature	3
Journal of Accounting Research	8
Journal of Banking and Finance	2
Journal of Business Ethics	5
Journal of Business Research	1

Journal of Corporate Finance	15
Journal of Empirical Finance	2
Journal of Finance	2
Journal of Financial Economics	27
Journal of Management	1
Management Science	4
Organization Science	1
Review of Accounting Studies	7
Review of Finance	1
Review of Financial Studies	2
Review of Quantitative Finance and Accounting	11
The Quarterly Journal of Finance	1
Total	214

Appendix B Variables name and definition

Overconfidence	Average value of the CEO's options scaled by the average strike price. The numerator is the value of the CEO's vested and unexercised options (ExecuComp: opt_unex_exer_val) scaled by the number of such options (ExecuComp: opt_unex_exer_num). The denominator is the difference between the firm's stock price at the end of the fiscal year (Compustat: prcc_f) and the numerator.
Acct_comp	Negative one multiplied by the average of the absolute value of the difference of the predicted value of a regression of firm i′s quarterly earnings on its quarterly return using the estimated coefficients for firms i and j, respectively, over the past four years. It is calculated for each firm i−firm j pair (i≠j), j=1, ..., J, firms in the same two-digit SIC industry as firm i. Source: Compustat, CRSP.
Compacct_4	Average of the four highest acct_compij values for firm i.
Compacct_10	Average of the ten highest acct_compij values for firm i.
CompacctInd	Median value of COMPACCTij for firm i for all firms in its industry.
CompacctIndmd	Mean value of the firm j in the same industry as firm i.
Holder 67	Indicator variable that equals one if a CEO's vested option holdings are at least 67% in-the-money in the entire period.
Leverage	Sum of long-term debt and short-term debt, scaled by total assets.
	Ratio of market value of equity to book value of equity.
MTB	Market value (CSHO∗PRCC_F) scaled by total common/ordinary equity(CEQ)
ROA	The firm's return on assets, defined as the net income scaled by total assets
Loss	Loss equals one if the firm reported loss in year t, and zero otherwise

Sale	The sale dived by total asset
OCF	Cash flow from the operation
HHI	The Herfindahl-Hirschman Index (HHI) for the firm's Fama-French industry. This is based on the sum of squared percentage market shares in sales.
STD_Sale	The standard deviation of sales over the previous 5 years.
Big4	Indicator variable if auditor from Big 4 agent
STD_CFO	The standard deviation of cash flow.
Analyst	Natural log of the number of the analyst at firm.
Busy_board	The proportion of independent directors holding three or more external board seats relative to the total number of independent directors.

Appendix C Variables name and definition

Model (3) variables:

Net_hire $_{it}$	Percentage change in the number of employees (EMP) from year *t* − 1 to year *t* for firm *i*.
Sales_growth $_{it}$	Percentage change in sales (REVT) in year *t* for firm *i*.
ROA $_{it}$	Return on assets (NI / lag(AT)) in year *t* for firm *i*.
ΔROA $_{it}$	Change in return on assets in year *t* for firm *i*.
Return $_{it}$	Total stock return during fiscal year *t* for firm *i*.
Size $_{it-1}$	Natural log of market value (CSHO * PRCC_F) at the end of fiscal year *t* − 1 for firm *i*.
Size_R $_{it-1}$	Percentile rank of $SIZE_{it-1}$.
Quick $_{it-1}$	Quick ratio ((CHE + RECT) / LCT) at the end of year *t* − 1 for firm *i*.
ΔQuick $_{it}$	Percentage change in the quick ratio in year *t* for firm *i*.
Lev $_{it-1}$	Leverage for firm *i*, measured as the sum of debt in current liabilities and total long-term debt (DLC + DLTT) at the end of year *t* − 1, divided by year *t* − 1 total assets.
Lossbinx $_{it-1}$	There are five separate loss bins to indicate each 0.005 interval of *ROA* from 0 to −0.025 in period *t* − 1 for firm *i*. For example, *LOSSBIN1* is equal to 1 if *ROA* ranges from −0.005 to 0. *LOSSBIN2* is equal to 1 if *ROA* is between −0.005 and −0.010. *LOSSBIN3*, *LOSSBIN4*, and *LOSSBIN5* are defined similarly.

Model (4) variables:	
MTB	Market-to-book ratio (CSHO * PRCC_F / SEQ) in year t − 1 for firm i.
STD_CFO	Standard deviation of firm i's cash flows from operations (OANCF) from year t − 5 to t − 1.
STD_Sale	Standard deviation of firm i's sales from year t − 5 to t − 1.
Loss	Indicator variable coded as 1 if firm i had negative ROA.
ROA	The percentage of net income divide the total assets.
OCF	The cash flow from the operating activity.
Sale	The sale revenue over the years.
Lev	Percentage of the long-term debt with debt in current liabilities to the total assets.
Tenure	The number of consecutive years that a CEO served.
R&D Investment	The ratio of R&D investment to total assets.

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