Three Essays on Strategic Information Disclosure

Jingwen Shi

A thesis submitted in accordance with the requirements for the

Degree of Doctor of Philosophy

Newcastle University Business School

March 2023

ABSTRACT

Based on a sample of non-financial firms within the S&P 500 index over the period 2009 to 2018, this thesis investigates the determinants of corporate strategic information disclosure in three main areas in attempts to enhance the understanding of managers' considerations when they make strategic decisions. I start by comprehensively reviewing existing studies on strategic information disclosure in Chapter 2, including discussions on the relevant concepts, theories, determinants, consequences, and measurements of strategic information disclosure.

Chapter 3 investigates the impacts of ownership structure and product market competition on strategic information disclosure, separately and interactively. The results show that managerial and blockholder ownership and product market competition discourage firms to release strategic information. Specifically, the negative association between managerial ownership and strategic information disclosure is only found in non-competitive industries; therefore, product market competition can be viewed as a substitute for managerial ownership to influence managers' strategic decisions. Moreover, the results show a mixed relationship between the interaction term (blockholder ownership interact with competition) and strategic information disclosure. The mixed relationship implies that the negative impact of blockholder ownership on strategic information disclosure decreases as product market competition increases; however, when product market competition reaches a certain level, the impact of blockholder ownership increases again. These results suggest that ownership structure and product market competition interact with each other to shape the corporate disclosure behaviour. Finally, my extended analyses show that compared with firms with strategic information disclosure in competitive industries, corporate strategic information disclosure leads to relatively easier access to finance, greater firm performance and higher firm value when companies operate in non-competitive industries. I also find that strategic information disclosure leads to harder access to

finance and poorer firm performance when blockholder control is greater in the company.

Chapter 4 investigates the association between managerial ability and strategic information disclosure. The results show that companies with high-ability managers are correlated with a lower level of strategic information disclosure. The potential economic interpretation of this negative relationship is that stakeholders' uncertainty regarding firms' performance and future prospects increases their information needs for companies and managers' career concerns, thus resulting in increased managerial incentives to provide additional information; however, a firm with a high-ability manager is associated with less stakeholders' uncertainty about the firm's future, thus resulting in decreased outsiders' demand for additional information and manager's career concerns (Bochkay et al., 2019). Moreover, given the existence of the proprietary costs, high-ability managers are discouraged to provide additional strategic information (Bhojraj et al., 2004; Lu and Tucker, 2012).

Chapter 5 examines how corporate reputation and CEO (chief executive officer) reputation, separately and jointly, affect strategic information disclosure. This study finds a significant and positive association between corporate reputation and strategic information disclosure, implying that more reputable companies have incentives to provide additional corporate strategies-related information to outsiders in order to signal their efforts and ability. However, the results show a significant and negative association between CEO reputation and strategic information disclosure, in support of managerial ability evidence in Chapter 4. Finally, the results suggest that the influence of CEO reputation on firms' disclosure decisions making is stronger than the influence of corporate reputation; CEO reputation moderates the positive effect of corporate reputation on the level of strategic information disclosure.

DEDICATION

I dedicate this thesis to my parents, Honghui Deng and Longyang Shi.

Thank you for your love and support!

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my supervisor, Dr. Chen Su, who provided me the opportunity to study under his supervision. During the whole journey of PhD study, I received guidance, inspiration, support, and encouragement from him. I really appreciate his hard work, feedback, and suggestions. Without his encouragement and help, this thesis would not have been successfully carried out. I am also thankful to my second supervisor, Dr. Zhijuan Wu. She encouraged me with her warm words and have always been kindly concerned for me. Her helpful advice and continuous encouragement give me the faith to overcome difficulties.

I am very grateful to my former supervisors at Xi'an Jiaotong-Liverpool University (XJTLU) and the opportunity to work as a research assistant at XJTLU in 2018. This research assistant experience has provided me with a solid foundation for my subsequent PhD study. In addition, I have learned valuable knowledge and research skills from my former supervisors at XJTLU.

I am extremely thankful to my mom and my dad, Honghui Deng and Longyang Shi, for loving me, supporting me, guiding me, and encouraging me during every stage of my life. Without their love and support, I would not have been able to progress through many difficult times.

Finally, I must express my very special thanks to my dear friends, Mingxue Wei, Haoyu Wang, and Mengyu Zhang, who have been accompanying me, helping me, and taking care of me. Our friendship made my PhD journey in the UK interesting and colourful. During the most difficult time (COVID-19), Mingxue’ s patient comfort and consistent companionship have helped me to muster up the courage to face the difficulties.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

Abbreviation	Meaning
ABS	Association of Business School
AIMD	Artificial Intelligence Measurement of Disclosure
AMA	America's Most Admired Companies
BLOCK	Blockholder Ownership
CAC	Cotation Assistée en Continu (French Stock Market Index)
CAR	Cumulative Abnormal Return
CEO	Chief Executive Officer
CIE	Corporate Information Events
CRSP	The Centre for Research in Security Prices
CSR	Corporate Social Responsibility
DAX	Deutscher Aktien Index
DEA	Data Envelopment Analysis
E/S	EBITDA Divided by Total Aales
EBITDA	Earnings before Interest, Taxes, Depreciation, and Amortization
EY	Ernst & Young
FDW	Fair Disclosure Wire
FFR	Four-Firm Concentration Ratio
Fin Cons	Financial Constraints
FLS	Forward-Looking Statements
FT	Financial Times
GAI	General Ability Index
HHI	The Herfindahl-Hirschman Index
HK	Hong Kong
IMR	Inverse Mills Ratio
IPO	Initial Public Offering
IR	Integrated Reporting
ISE	Istanbul Stock Exchange
ISS	The Databases of Institutional Shareholders Services
JCR	Journal Citation Reports
JSE	Johannesburg Stock Exchange
JSTOR	Journal STORage
KZ	Kaplan and Zingales
Lev	Leverage
M&A	Mergers and Acquisitions
MA	Managerial Ability
MD&A	Management Discussion and Analysis
MOWN	Managerial Ownership
MTB	Market to Book Ratio
NASDAQ	National Association of Securities Dealers Automated Quotations
NFL	National Football League
NSE	Nairobi Stock Exchange

NYSE	New York Stock Exchange
OLS	Ordinary Least Squares
OMR	Open-Market Repurchase
PE	Price to Earnings Ratio
PRC	People’s Republic of China
R&D	Research and Development
RNS	The Regulatory News Service
ROA	Return on Assets
ROC	Receiver Operating Characteristic
S&P	Standard & Poor's
SEC	The US Securities and Exchange Commission
SEHK	Stock Exchange of Hong Kong
SES	Stock Exchange of Singapore
SIC	Standard Industrial Classification
SID	Strategic Information Disclosure
SJR	SCImago Journal & Country Rank
UAE	The United Arab Emirates
UK	The United Kingdom of Great Britain and Northern Ireland
US	The United State of America

CHAPTER 1 INTRODUCTION

1.1 Introduction

Strategy is a sustainable competitive advantage for companies. A company can outperform its competitors only if it chooses to perform activities differently (Porter, 1996). Even in a turbulent short-term environment, companies still engage in long-term strategic planning. Such planning enables companies to set performance goals and plan specific action steps to achieve them (Grant, 2003). Managers believe that corporate strategies can affect a company's performance. With a good corporate strategy, a company can continuously create high value (Gao et al., 2008). Communication of corporate strategies seems to be increasingly common and important for large global companies because it builds relationships with analysts and investors. Analysts and investors will better understand a company's plans and then be able to more accurately assess a company's potential value based on corporate strategic information (Gao et al., 2008; Whittington and Yakis-Douglas, 2012). Whittington and Yakis-Douglas (2012) suggest that strategy communications play an active orientation role to the shaping of corporate reputations, for example, new ventures and firms undertaking IPOs mainly communicate their strategy because they need investors and customers. However, strategic information disclosure practices also cause significant harmful impacts on the corporate/CEO reputation, which may reflect in the company's stock price. For example, Nokia held a "strategy and finance briefing" on 11 February 2011. Stephen Elop (Nokia's CEO) announced their overall strategies for the company's future such as alliance with Microsoft. However, this strategic information disclosure caused Nokia's stock price to plummet by 7%. Therefore, it is important for companies to consider the trade-off between the costs and benefits of strategic information disclosure, and make appropriate disclosure decisions.

Strategic information disclosure [1] generally refers to information provided by companies about their specific initiatives, future actions and plans, strategic focus, and future prospects (Agapova and Volkov, 2019; Ferreira and Rezende, 2007; Gray et al., 1995; Gu and Li, 2007; Lu and Tucker, 2012; Santema et al., 2005; Sánchez et al., 2011; Sieber et al., 2014; Whittington et al., 2016). Why do companies communicate strategies? According to accounting and finance literature, it is hard for managers to make decisions on whether they need to provide additional information, or how to release the information that they think relevant for investors and other stakeholders. Studies indicate that strategic information disclosure can to some degree alleviate information asymmetry and a company's cost of capital (Lu and Tucker, 2012; Thakor, 2015). It is helpful for companies to provide additional information to mitigate agency problems between the principal and the agent (Cotter et al., 2011; Healy and Palepu, 2001). Besides, companies with strong confidence and ambition are motivated to disclose strategy-related information to gain the support of shareholders and analysts. Research also suggests that strategic information disclosure may enhance corporate reputation (Whittington and Yakis-Douglas, 2012). However, preparing the appropriate information and efficiently presenting it to outsiders generates direct costs (Armitage and Marston, 2008). Chen et al. (2014) suggest that voluntary disclosure of proprietary or sensitive information is associated with low overall benefits and increased potential costs. Releasing additional strategic information to the product market has potential proprietary costs due to the existence of competitors, thus likely harming the competitive position of the company (Cotter et al., 2011). In addition, strategic information disclosure may cause disagreements between investors and managers, increasing the probability of funding denial (Agapova and Volkov, 2019; Thakor, 2015).

[1] In this thesis, strategic information disclosure refers to firms' strategy-related information provided by managers. This term is significantly different from the strategic disclosure of information. The strategic disclosure of information means companies disclose information in a strategic way (Sánchez et al., 2011). A number of studies entitled "strategic information disclosure" investigate how firms strategically disclose private information rather than how they disclose corporate strategy-related information (see, for example, Azaria et al., 2014; Camodeca et al., 2019; Hotz and Xiao, 2013; Jansen, 2010). In order to capture information about firms' future actions and their current strategic initiatives, this thesis defines strategic information disclosure as information provided by a company about its future strategic plans and the continuation of ongoing strategies.

Consequently, companies have both incentives and disincentives to provide strategic information to the market. They need to consider the trade-off between the costs and benefits of disclosure, and make different strategic information disclosure decisions for different audiences.

As companies have realized the importance of strategic information disclosure, scholars have also paid more attention to this issue. Currently, an increasing number of theoretical and empirical studies examine corporate strategic information disclosure behaviour, showing that due to the subjective and sensitive nature of strategic information, managers' disclosure decisions for strategic information directed to various audiences are different from those for other types of information disclosure, such as financial information (Cotter et al., 2011; Gray et al., 1995; Meek et al., 1995). Studies also show that strategic information disclosure generates various consequences in the stock market (e.g., Athanasakou et al., 2019; Athanasako et al., 2020; Baginski et al., 2017; Barth et al., 2017; Bozanic et al., 2018; Grüning, 2011; Gietzmann et al., 2005; Hamrouni et al., 2017; Lu and Tucker, 2012; Mavis et al., 2019; Siebe et al., 2014; Whittington et al., 2016). Although a series of studies mentioned above conduct research on strategic information, the determinants of corporate strategic information disclosure still remain largely unexplored. Given the importance of strategic information disclosure and the lack of research on such information, this thesis aims to further investigate the factors and economic consequences of corporate strategic information disclosure.

1.2 Research Framework

This thesis empirically examines the external determinants and internal determinants of strategic information disclosure. Specifically, the first empirical study investigates the interaction effect between product market competition (external factor) and ownership structure (internal factor) on strategic information disclosure; the second empirical study explore the relationship between managerial ability (internal factor) and strategic

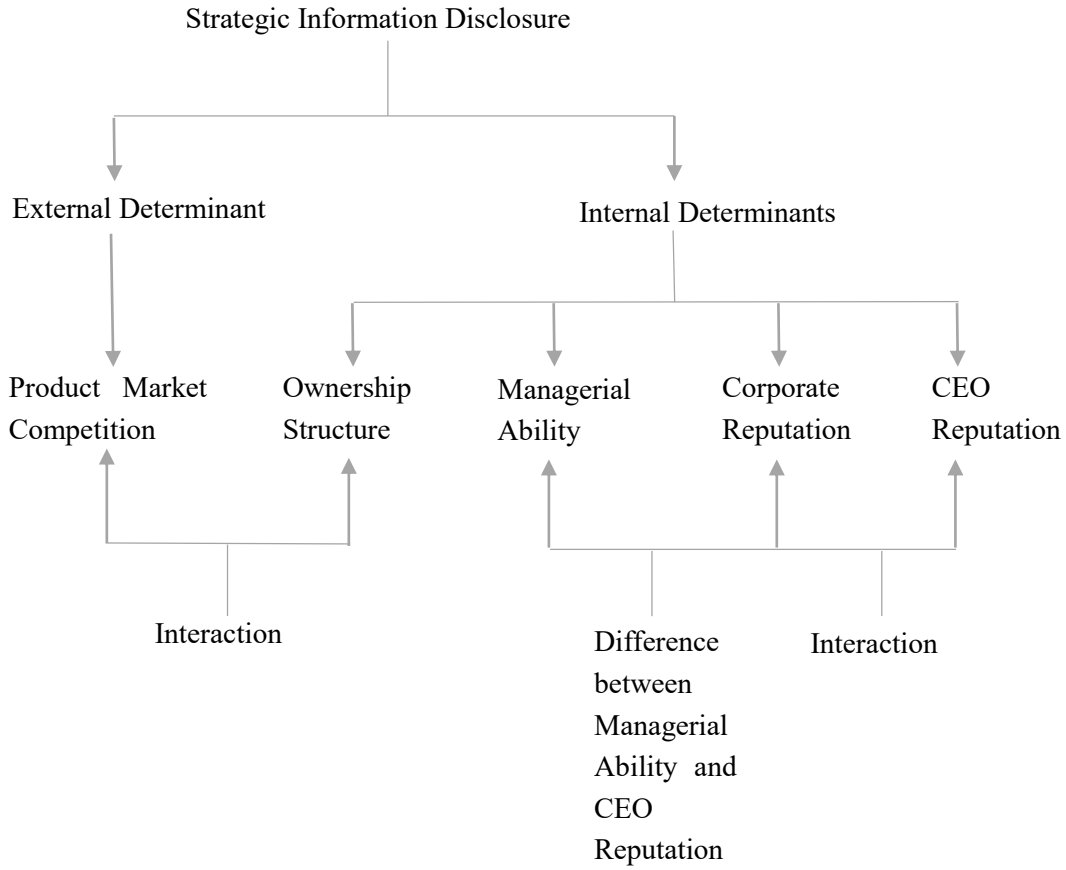
information disclosure; the third empirical study considers the joint effect between CEO reputation and corporate reputation (both are internal factors) on strategic information disclosure. Figure 1.1 shows the research framework of this thesis.

1.2.1 First Research: Ownership Structure, Product Market Competition, and Strategic Information Disclosure

1.2.1.1 Motivations

Researchers recognize the importance of corporate strategic information disclosure and conclude that finding the optimal level of strategic information disclosure requires companies to consider the trade-off between the benefits and costs of releasing information (Agapova and Volkov, 2019; Cotter et al., 2011; Healy and Palepu, 2001; Lu and Tucker, 2012; Thakor, 2015). Agency theory shows that ownership structure as an internal corporate governance mechanism significantly affects corporate voluntary information disclosure decisions. Specifically, firms with a lower level of ownership (managers or blockholders) are associated with more agency problems, thus resulting in a higher demand for additional information (Agapova and Volkov, 2019; Chau and Gray, 2002; Htay, 2012). Besides, proprietary cost theory points out that product market competition is an important factor affecting companies' disclosure decisions (Cotter et al., 2011; Li, 2010). Specifically, product market competition pressure gives incentives to companies to withhold sensitive information, because such information may be exploited by competitors, thus threatening the companies' competitive position (Depoers and Jeanjean, 2010; Healy and Palepu, 2001; Verrecchia, 1983; Verrecchia, 2001). However, existing studies provide mixed results (e.g., Bhojraj et al., 2004; Burks et al., 2018; Lu and Tucker, 2012). Motivated by this strand of research, first, this study investigates how ownership structure and product market competition influence corporate strategic information disclosure decisions by using a new measurement of strategic information disclosure.

Figure 1.1 Research Framework



The first empirical study is relevant to the interaction effect between product market competition and ownership structure on strategic information disclosure.
The second empirical study is relevant to the association between managerial ability and strategic information disclosure.
The third empirical study is relevant to the joint effect between CEO reputation and corporate reputation on strategic information disclosure.

Second, prior studies theorize that competition pressure may reduce (or induce) managerial slackness, hence resulting in the decline (increase) in the need to provide managers with internal monitoring (Hart, 1983; Scharfstein, 1988; Schmidt, 1997). Based on the theoretical predictions, product market competition may substitute for or complement corporate governance mechanisms to improve the efficiency of management decision making. Over the years, an increasing number of studies have investigated this interaction between product market competition and corporate governance on various aspects such as stock prices, firm performance, and the profitability of corporate R&D investment (e.g., Giroud and Mueller, 2011; Liao and

Lin, 2017). Birt et al. (2006) introduce a new economic variable that unifies both ownership and competition in their model, and find that ownership interact with competition to significantly affect firm's voluntary segment disclosure. However, to date, there is little research investigating the interaction effect between product market competition and corporate governance on corporate disclosure decisions, let alone the strategic information disclosure. Therefore, this thesis is motivated to fill this research gap by exploring the interaction effect between ownership structure and product market competition on corporate strategic information disclosure decisions.

1.2.1.2 Main Findings

This study finds that managerial ownership and blockholder ownership discourage firms to provide strategic information; and product market competition also gives disincentives to firms to release strategic information. Furthermore, the negative and significant association between managerial ownership and strategic information disclosure is significant in non-competitive industries only; therefore, product market competition can be viewed as a substitute for managerial ownership to influence managers' decisions. However, I observe a mixed relationship between the interaction term (blockholder ownership interacts with product market competition) and strategic information disclosure. This implies that the interaction between blockholder ownership and product market competition combines both substitutionary and complementary effects on managers' strategic information disclosure decisions. Specifically, the effect of blockholder ownership on strategic information disclosure decreases as product market competition increases; however, when competition reaches a certain level, the influence of blockholder ownership on strategic information disclosure becomes significant again. These results suggest that ownership structure and product market competition interact with each other to shape the corporate strategic information disclosure behaviour.

Furthermore, I conduct additional analysis on the disclosure tone of strategic information. The results show that there is a decrease in positive tone of strategic

information disclosure when firms face fierce competition in the market, suggesting that companies attempt to prevent competitors from entering the market by the negative change in disclosure tone. Similarly, managers owning more shares are associated with a reduction in positive disclosure tone when companies face fierce product market competition; however, companies with a higher level of managerial ownership tend to disclose strategic information in a relatively positive tone when product market competition is at a lower level, thereby benefitting from capital market. However, the interaction between blockholder control and product market competition has no direct impact on strategic information disclosure tone.

Finally, my extended analysis shows that compared with firms with strategic information disclosure in competitive industries, corporate strategic information disclosure leads to relatively easier access to finance, greater firm performance and higher firm value when companies operate in non-competitive industries. I also find that increase in strategic information disclosure leads to harder access to finance when blockholder control is greater in the company. The underlying reason may be the investor-management disagreement. In addition, blockholder ownership and strategic information disclosure interact with each other to negatively affect firms' profitability.

1.2.2 Second Research: Managerial Ability and Strategic Information Disclosure

1.2.2.1 Motivations

The impacts of managerial ability on corporate decisions have been long considered. Existing study generally conclude that more talented managers are expected to identify technology and industry trends better, estimate market demand more accurately, invest in higher-profit projects, and manage employees more effectively than managers with less ability (e.g., Andreou et al., 2016; Baik et al., 2011; Bochkay et al., 2019; Cao et al., 2019; Curi and Lozano-Vivas, 2020; Francis et al., 2013; Gan, 2019; Hasan, 2020; Khurana et al., 2018; Koester et al., 2017; Pathan, 2009; Yung and Chen, 2018).

In disclosure literature, Trueman (1986)'s theory shows that talented managers are encouraged to provide voluntary earnings forecasts to reveal their abilities and improve corporate market value. Healy and Palepu (2001) find that no empirical study to either support or refute the management talent signalling hypothesis. Later, several studies empirically investigate the association between managerial ability and corporate voluntary disclosure decisions, but provide mixed results. For example, Baik et al. (2011) find that the probability and frequency of management earnings forecasts are positively associated with CEO ability. However, Bochkay et al. (2019) indicate that CEOs' tenure is negatively related to corporate forward-looking disclosure and disclosure tone. They argue that the reduction of managerial ability uncertainty for investors decreases the demand for additional information and managerial career concerns, therefore, resulting in decreased forward-looking disclosure

Prior studies on the impacts of managerial ability on voluntary disclosure mainly focus on financial disclosure (e.g., management forecast). To the best of my knowledge, there is no research that analyse the role of managerial ability in corporate strategic information disclosure decisions. Therefore, this study fills this research gap by examining how managerial ability affect strategic information disclosure.

1.2.2.2 Main Findings

My results show that companies with high-ability managers are associated with a lower level of strategic information disclosure. The potential economic interpretation of this negative relationship is that stakeholders' uncertainty regarding firms' performance and future prospects increases their information needs for companies and managers' career concerns, thus resulting in increased managerial incentives to provide additional information; however, a firm with a high-ability manager is associated with less stakeholders' uncertainty about the firm's future, thus resulting in decreased outsiders' demand for additional information and manager's career concerns (Bochkay et al., 2019). Moreover, given the existence of the proprietary costs, more able managers may

have less incentive to provide additional strategic information (Bhojraj et al., 2004; Lu and Tucker, 2012). To verify my main findings, I conduct a series of robustness analyses, including the Granger causality test, alternative proxies for managerial ability (Historical ROA), and additional controls (Firm age, Executive age, and Compensation). The results of robustness analyses are support my previous conclusion.

I further conduct several additional analyses on strategic information disclosure. First, I explore the association between managerial ability and the disclosure tone changes of strategic information. My findings indicate that there is an increase in the positive tone of strategic information disclosure when companies led by high-ability managers. Second, I investigate the effects of managerial ability on various categories of strategic information disclosure. The results indicate that companies with high-ability managers tend to reduce the level of all categories of strategic information except for moving-related strategic information. The results support my main finding that more able managers have less incentive to disclose strategic information.

1.2.3 Third Research: Corporate Reputation, CEO Reputation, and Strategic Information Disclosure

1.2.3.1 Motivations

Existing research do not clearly distinguish the difference between managerial ability and CEO reputation, though I find that the criteria for evaluating managerial ability and CEO reputation is different. Specifically, managerial ability more focuses on managerial skill to create value for a company. Demerjian et al. (2012, 2013) define managerial ability as managers' efficiency, relative to their industry counterparts, in generating revenues from firms' resources. More talented managers are expected to identify technology and industry trends better, estimate market demand more accurately, invest in higher-profit projects, and manage employees more effectively than their less talented counterparts. They develop a seminal measurement of managerial ability based on the notion that high-ability managers should be better at generating revenues from

corporate resources, and argue that this firm efficiency-based proxy allows them to better distinguish the effect of the managerial ability from other effects. Comparatively, the selection criteria for evaluating CEO reputation is broader than managerial ability. For example, Chief Executive magazine evaluates a chief executive of the year based on 11 elements such as courage, CEO respect, moral dimension, personal character, and so on (see full details at https://bit.ly/2A9uFGM). Accordingly, the difference between managerial ability and CEO reputation motives me to examine the impact of CEO reputation on strategic information disclosure.

Moreover, Boivie et al. (2016) suggest that reputation research tends to focus on the reputation of one focal actor and its impacts on various outcomes. However, in many settings, there are multiple reputations may influence firms' outcomes. Therefore, it is important to investigate how the reputation of multiple actors (e.g., CEO reputation and corporate reputation) might jointly affect an outcome. Besides, Weng and Chen (2017) investigate the effect of interaction between corporate reputation and CEO reputation on corporate financial performance. They find that CEO reputation is more important to firm performance than corporate reputation. Inspired by Boivie et al. (2016) and Weng and Chen (2017), I am interested to examine the relationship between CEO/corporate reputation and strategic information disclosure, and the joint effect between CEO reputation and corporate reputation on corporate strategic information disclosure decisions. To the best of my knowledge, there is little research addressing the influence of corporate and CEO reputation on strategic information disclosure, let alone the interaction effect between them.

1.2.3.2 Main Findings

I find that firms with higher reputation tend to disclose more strategic information to the public. However, more reputable CEOs tend to reduce the level of strategic information disclosure. I also find that the effect of CEO reputation on firms' disclosure decisions making is stronger than the impact of corporate reputation; CEO reputation

moderates the positive impact of corporate reputation on strategic information disclosure. My main results are robust to the endogeneity analysis and alternative measures of corporate reputation and CEO reputation.

1.3 Contributions of the Thesis

This thesis seeks to add novel contributions towards the knowledge of strategic information disclosure. First, this thesis provides new evidence to the disclosure literature on the role of ownership structure (managerial and blockholder ownership), product market competition, managerial ability, CEO reputation, and corporate reputation. Empirical evidence relating to strategic information disclosure is limited. This study enriches the literature on the determinants of strategic information disclosure by using a new measurement[2] of strategic information disclosure. Second, there is prior research investigating the interaction effect between corporate governance and product market competition on various aspects such as stock prices, firm performance, and the profitability of corporate R&D investment (e.g., Giroud and Mueller, 2011; Liao and Lin, 2017). However, there is little research examining such interaction effects on corporate disclosure decisions. This study provides empirical evidence on the interaction effect between ownership structure and product market competition on strategic information disclosure. Third, this thesis contributes to literature by providing the new evidence of the joint effect between corporate reputation and CEO reputation on strategic information disclosure. I analyse how corporate reputation and CEO reputation interact to shape corporate strategic information disclosure behaviour. My result shows that CEO reputation effect on firms' decisions making is stronger than corporate reputation effect. Furthermore, this thesis sheds light on the tone changes of strategic information disclosure under different conditions (product market competition, ownership control, and managerial ability). Previous studies pay little attention to the

[2] This study employs the strategic word list of Agapova and Volkov (2019) but a new coding scheme to assign strategic information disclosure scores to each company. This new coding scheme allows us to more comprehensively investigate the level of strategic information disclosed by a company based on yearly data.

tone of strategic information disclosure. Finally, this study contributes to the literature by investigating how strategic information disclosure influences firm profitability, firm value, and access to finance. It adds insights to the disclosure literature on the economic consequences of strategic information disclosure.

Concerned with practical implications, this study provides valuable suggestions for companies. First, companies should adjust their corporate governance structure based on different levels of product market competition, and thus reduce the cost of internal monitoring. The underlying reason is that, competitive pressure imposes discipline on managers to reduce agency problems, thus ensuring that managers are obliged to make optimal decisions and maximize profits. Second, companies should consider a trade-off between the benefits and costs of releasing strategic information and make appropriate decisions about disclosure activities for ensuring the effective operation of companies, based on the different levels of product market competition and ownership control. Specifically, companies should encourage less strategic information disclosure when they face fierce product market competition, as such disclosure leads to harder access to finance, poor firm performance, and lower firm value when companies operate in competitive industries. Besides, companies should reduce the level of strategic information disclosure when blockholder control is greater in the company, as such disclosure may result in investor-management disagreement, and thus lead to bad outcomes (e.g., the probability of funding denial).

1.4 Thesis Layout

The remainder of the thesis proceeds as follow: Chapter 2 provides a comprehensive review of studies on strategic information disclosure. In this chapter, discussions on the concepts, criteria, related theories, determinants, consequences, and measurements of strategic information disclosure are provided. Chapter 3 presents the first empirical study on the influence of ownership structure and product market competition on strategic information disclosure, separately and interactively. Chapter 4 empirically

investigates the relationship between managerial ability and strategic information disclosure. Chapter 5 evaluates how corporate reputation and CEO reputation separately and jointly affect strategic information disclosure. Finally, Chapter 6 summarises the main findings and contributions, along with the limitations and suggestions for future research.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter aims at providing a comprehensive review of studies on strategic information disclosure in four main respects: (i) the concepts of strategic information; (ii) the underlying factors (main incentives) that drive companies to disclose strategic information; (iii) the economic consequences of corporate strategic information disclosure; and (iv) approaches to measuring the quantity and quality of strategic information disclosure.

I begin with the literature selection criteria of the study in Section 2.2. Section 2.3 discusses the definitions, characteristics, and categories of corporate disclosure. Section 2.4 summarises various concepts and criteria for strategic information adopted in the existing literature. Section 2.5 identifies strategic information disclosure-related theories and various incentives under these theories for explaining strategic information disclosure decisions. Section 2.6 discusses the determinants and consequences of strategic information disclosure. Section 2.7 reviews various approaches applied in studies for measuring strategic information disclosure. Section 2.8 discusses how managers communicate corporate strategies. Section 2.9 provides the summary of this chapter.

2.2 Literature Selection Criteria

Regarding the selection of academic research on strategic information disclosure, I first employ various combinations of keywords (‘strategic information’, ‘strategic disclosure’, ‘strategic information disclosure’, ‘strategic’, ‘strategy’, ‘information’, ‘disclosure’, ‘strategic plan presentation’, ‘strategic plan disclosure’, ‘strategy disclosure’, ‘strategy communication’, ‘communicating corporate strategy’, and ‘communication of strategy’) to search for articles that investigate corporate strategic information disclosure. I search the different combinations of keywords within four

main academic literature databases, including Web of Science, JSTOR, ScienceDirect, and Scopus databases.

I then remove duplicates, books, working papers, and dissertations. The studies that focus on corporate disclosure strategy, specific corporate strategic moves, mission statements, and MD&A (Management Discussion and Analysis), are also excluded.[3] To obtain additional studies, I identify the articles concerning strategic information disclosure cited in the recent important studies on strategic information disclosure (include one important relevant working paper). I also identify the citations concerning strategic information disclosure to these articles through a Google Scholar search.

Finally, I remain articles published in high quality peer-reviewed journals, including journals ranked as 3* or above in the UK'S Association of Business School (ABS) journal ranking guide and journals included in Quartiles 1 or Quartiles 2 of Journal Citation Reports (JCR) and SCImago Journal & Country Rank (SJR). In addition, I also include 1 recent important working paper and 7 relevant papers published in journal with ABS 2*.

[3] In this thesis, the strategic information disclosure refers to firms' strategy-related information provided by companies. This term is significantly different from the strategic disclosure of information. The strategic disclosure of information means companies disclose information in a strategic way (Sánchez et al., 2011). During the literature selection process, I find that a number of studies entitled 'strategic information disclosure' actually investigate how firms strategically disclose private information rather than disclose corporate strategy-related information (see, for example, Azaria et al., 2014; Camodeca et al., 2019; Hotz and Xiao, 2013; Jansen, 2010).
This chapter aims to review research on companies' overall strategic information disclosure, which involves a broader scope of companies' strategies. Therefore, studies that only focus on specific corporate strategic moves, such as strategic alliance announcement, R&D disclosure, or merger announcements, are excluded.
The reason for excluding research on mission statements is as follow: a mission statement provides the widest scope and far future definition of purpose and strategy for the various stakeholders of the company. The purpose of a mission statement is to help a company to form its identity, purpose, and direction, and thus a mission statement may stay unchanged for many years (Bartkus et al., 2002; Ireland and Hirc, 1992; Leuthesser and Kohli, 1997; Noy, 1998).
MD&A refers to managerial commentary about a company's current state and future prospects. The purpose of MD&A is to evaluate a firm's liquidity, capital resources, and operations in a way that investors can understand (Li, 2010). Although MD&A includes some strategy-related information, it also contains other types of information, such as the narrative explanation of the financial statements (see, for example, Li, 2010; Muslu et al., 2015). Therefore, I do not consider research on MD&A.

The final sample of this literature review is 51 articles, including 50 published studies and 1 recent working paper (See the selection criteria for the literature review in Table 2.1). This chapter provides a wide-ranging review of the literature concerning strategic information disclosure. I cover articles published between 1985, the first paper that conduct a survey to assess strategic information, and 2020.

Table 2. 1 Study selection

Selection criteria leading to inclusion and exclusion of studies	
Initial sample	202
– I first used various combinations of keywords ('strategic information', 'strategic disclosure', 'strategic information disclosure', 'strategic', 'strategy', 'information', 'disclosure', 'strategic plan presentation', 'strategic plan disclosure', 'strategy disclosure', 'strategy communication', 'communicating corporate strategy', and 'communication of strategy') within four main academic literature databases, including Web of Science, JSTOR, ScienceDirect, and Scopus databases, to search for articles that investigate corporate strategic information disclosure.	202
– Remove duplicates, books, working papers, and dissertations.	(24)
– Remove studies focus on corporate disclosure strategy, specific corporate strategic moves, mission statements, and MD&A	(90)
Subtotal	88
– Identify articles concerning strategic information disclosure cited in the recent important studies on strategic information disclosure (add one recent important working paper)	9
– Identify the citations concerning strategic information disclosure to these articles through a Google Scholar search	21
Subtotal	118
– I only remain articles published in a ranked journal 3* or 4* or included in Quartiles 1 or Quartiles 2 of JCR or SJR (except one recent important working paper and seven relevant papers with 2*).	(67)
Final sample	51

2.3 Corporate Information Disclosure

Corporate information disclosure is crucial to the operation of an effective capital

market. For example, several corporate scandals occurred worldwide because of insufficient or improper corporate information disclosure; therefore, without information transfer, markets may perform poorly (Leland and Pyle, 1977). In addition, full disclosure of relevant information by firms allows investors or other stakeholders to make appropriate decisions. Corporate disclosure generally refers to the communication of relevant information about a firm's financial situation and performance, including financial information, non-financial information, quantitative information, and qualitative information (Owusu-Ansah, 1998). Corporate information disclosure is broadly grouped into two categories, mandatory disclosure and voluntary disclosure, respectively.

2.3.1 Mandatory Disclosure

Lack of transparency in corporate operations is one of the most significant reasons of the financial crisis. Before 1933, information disclosure was mainly voluntary. Companies were allowed to choose whether to release information. Even large listed companies chose to provide little information. However, following the Crash and the Great Depression in 1929, the public and politicians claimed that a lack of transparency in companies' operations encouraged fraud. With the passage of the Securities Act of 1933 and the Securities Exchange Act of 1934, federally mandated disclosures arose in the US. The Acts required companies listed on the US exchanges to provide detailed information, such as corporate financial results, operating results, and management compensation. According to Daines and Jones (2012), the Securities Act of 1933 and Securities Exchange Act of 1934 provide a fundamental regulation for US companies. Besides, they are responses to the stock market crash of 1929 and the followed Great Depression. Subsequently, additional Acts such as the Sarbanes-Oxley Act of 2002 extended firms' disclosure requirements and government inspection.

Corporate mandatory disclosure refers to reporting in accordance with government requirements (Ghazali, 2008). Financial regulation requires a considerable amount of

mandatory disclosure via various regulated financial filings, such as the financial statements, footnotes, management discussions and analyses (Healy and Palepu, 2001). The purpose of mandatory disclosure is to meet stakeholders' information demand and ensure production quality control via compliance with regulations and standards. Mandatory disclosure implies that the communication of a minimum level of information in firms' reports is sufficient to enable those with interests in a disclosing company to make a reasonable evaluation of the relative merits and risks of the company (Owusu-Ansah, 1998). The minimum amount of firms' mandatory disclosure is determined by accounting standards, the relevant national company law, industrial rules or standards, and stock market requirements. Sufficient disclosure in a company's reports depends on the quality and quantity of the disclosed information, the presentation form of the information, and the frequency and timeliness of public release (relative to established standards) (Owusu-Ansah, 1998).

2.3.2 Voluntary Disclosure

In addition to mandatory disclosure, firms engage in voluntary disclosure practices. They tend to provide additional information to the capital market through conference calls, presentations, internet sites, press releases, and corporate reports (Einhorn, 2005). Meek et al. (1995) define voluntary disclosure as,

"*Voluntary disclosures – disclosures in excess of requirements – represent free choices on the part of company managements to provide accounting and other information deemed relevant to the decision needs of users of their annual reports.*" (p. 555)

Unlike mandatory disclosure, voluntary disclosure includes information disclosure that exceeds the requirements, including information that the company's manager considers relevant to stakeholders.

It is common for companies to disclose information voluntarily. For example, much of the information released by companies in their annual reports is not required by law or

specific regulations (Botosan, 1997). Annual report is considered as one of the most vital and popular channel of information disclosure. Studies extensively examine corporate voluntary disclosure in annual reports, in both developed and developing countries (e.g., Gray et al., 1995; Meek et al., 1995; Chau et al., 2002; Ferguson et al., 2002; Wang et al., 2008; Chau et al., 2010; Qu et al., 2013; Hamrouni et al., 2017; Athanasakou et al., 2019; Athanasako et al., 2020). In addition to the annual report, companies also provide additional information to the public via internet sites, conference calls, press releases, mission statements, management forecasts, and analysts' presentation, among others (Higgins et al., 1989a; Healy and Palepu, 2001; Agapova and Volkov, 2019). Managers who provide additional information via these channels reach audiences far beyond the confines of their companies.

Voluntary disclosure comes to complement the mandatory disclosure that often seems to be insufficient for meeting investors and other stakeholders' needs. Traditional financial reporting mainly discloses historical information, however, it may be inadequate to reflect the complexity of a company's operation. Consequently, investors need additional information to evaluate companies' current and future cash flows and risks faced by companies, and thus reduce their uncertainty about the quality of companies (Meek et al., 1995). Companies voluntarily disclose additional information to satisfy investors and other stakeholders' information demand, and thus increase financing and reduce the cost of capital (Healy and Palepu, 2001; Meek et al., 1995). In addition to capital market transaction reasons, corporate control contests, stock compensation, litigation, management talent signalling, and proprietary costs also affect managers' disclosure decisions (Healy and Palepu, 2001). Studies show that poor stock performance and poor earnings performance cause high CEO turnover (DeAngelo, 1988; Morck et al., 1990; Palepu, 1986; Warner et al., 1988; Weisbach, 1988). Therefore, managers tend to use voluntary information disclosure to mitigate the probability of undervaluation and to interpret poor stock performance and poor earnings performance (Brennan, 1999; Healy and Palepu, 2001). Stock compensation theory suggests that

managers are rewarded by various stock-based compensation plans, which gives motivations to them to provide additional information (both good and bad information) to the public (Aboody and Kasznik; 2000; Noe, 1999). According to litigation cost theory, the threat of shareholder litigation gives both incentive and disincentive to managers to voluntarily disclose information. On the one hand, managers are encouraged pre-disclose information to reduce the cost of litigation (Healy and Palepu, 2001; Skinner, 1994). On the other hand, disclosure of forward-looking information may be penalized because of unexpected forecast errors. Management talent signalling theory indicates that talented managers have a motivation to voluntarily disclose earnings forecasts to show their ability (Healy and Palepu, 2001; Trueman, 1986). Finally, according to proprietary costs theory, the disclosure of sensitive information is costly because it may harm companies' competitive advantages in product markets (Darrough and Stoughton, 1990; Verrecchia, 1983).

Early literature (theoretical and empirical) mainly examines voluntary disclosure as somewhat amorphous (treated as a whole). Gray et al. (1995) suggest that decision-relevance of corporate information changes by different information types. Specifically, financial information has decision-relevance to investors; strategic type of information also has decision-relevance to investors; in contrast, nonfinancial information is generally specific to firms' social responsibility and is targeted at a wider range of stakeholders than investors. Accordingly, factors that influence corporate voluntary disclosure decisions may also change by information types. Numerous studies employ the similar method to examine corporate voluntary disclosure and divide the whole voluntary information disclosure into three major categories: financial information, nonfinancial information, and strategic information (e.g., Chau and Gray, 2002; Chau and Gray, 2010; Eng and Mak; 2003; Ferguson et al., 2002; Hamrouni et al., 2017; Lim et al., 2007; Qu et al., 2013; Wang et al., 2008). In line with Gray et al. (1995), Meek et al. (1995) develop a voluntary disclosure checklist consisting of eighty-five items of information divided into three major groups and twelve subgroups. Specifically,

financial information contains segment information, financial review information, foreign currency information, and stock price information; nonfinancial information includes directors and employee information, social responsibility information, and value added information; strategic information involves information about general corporate characteristics, corporate strategy, acquisitions and disposals, research and development, and future prospects. Based on US, UK, and continental European sample, Meek et al. (1995) show that variables have different impacts on financial information, nonfinancial information, and strategic information, respectively; and the importance of the factors changes by information types.

Within voluntary disclosure, the type of strategic information disclosure is increasingly becoming a more regular practice for companies because of the advantages to which it leads, such as the ability to differentiate a firm from others (Santema et al., 2005) and its important role in the assessment conducted by analysts, investors, and financial intermediaries (Higgins and Diffenbach, 1985). Strategic information disclosure reveals information about the strategies that the company is implementing and going to implement in the future (Santema et al., 2005; Lim et al., 2007). Such type of information can increase investors' confidence and reduce cost of capital (Gietzmann and Ireland, 2005; Sieber et al., 2014; Athanasakou et al., 2020). However, according to proprietary costs theory, the disclosure of strategic information is costly because it provides sensitive information to competitors (Verrecchia, 1983; Darrough and Stoughton, 1990). Besides, disclosure of strategic information may introduce investor-management disagreement, so investors may be reluctant to provide capital (Agapova and Volkov, 2019; Thakor 2015). Prior research generates different conclusions on the factors and consequences of strategic information disclosure. To the best of my knowledge, there is no comprehensive review of studies (theoretical and empirical) examining corporate strategic information disclosure.

2.4 Strategic Information

This section discusses various concepts and criteria for strategic information adopted in the existing literature. Studies in this area can be broadly grouped into three categories based on different focuses of strategic information: communicating corporate strategy, forward-looking strategic information disclosure, and corporate- and business-related strategic information disclosure. Several early studies preliminarily investigate the role of communicating corporate strategy; however, they do not provide a specific definition of strategic information disclosure (e.g., Diffenbach and Higgins, 1987; Higgins and Bannister, 1992; Higgins and Diffenbach, 1985; Higgins and Diffenbach, 1989a). Subsequently, a series of studies focus on forward-looking strategic information disclosure and provide more specific definitions (e.g., Agapova and Volkov, 2019; Bhojraj et al., 2004; Lu and Tucker, 2012; Sánchez et al., 2011; Santema et al., 2005, Whittington et al., 2016). Meanwhile, another series of studies attempt to investigate a wider scope of strategic information disclosure (e.g., Bowman and Helfat, 2001; Chau and Gray, 2010; Gray et al., 1995; Louie et al., 2019; Sieber et al., 2014; Sukhari and De Villiers, 2019). In these cases, strategic information disclosure includes the past aspects of strategic information, forward-looking strategic information, corporate strategy information, and business-strategy-related information. Table 2.2 provides more details on these studies, including concepts of strategic information and channels of release.

2.4.1 Communicating Corporate Strategy

Several early studies examine the role of corporate communication of strategy. Companies convey information about their strategic intentions and direction to various target audiences, including stockholders, security analysts, consumers, employees, unions, creditors, regulators, and legislators (Diffenbach and Higgins, 1987; Higgins and Bannister, 1992; Higgins and Diffenbach, 1985; Higgins and Diffenbach, 1989a). Higgins and Diffenbach (1985) suggest that,

"*In order to evaluate a company's strategic planning, one needs information about the company's strategy and its planning process…A company's strategic plan: i.e., a plan which describes the future direction of the company including the reallocation of assets and resources… A company's strategic planning system: a system by which the company formulates or reformulates its strategic plan.*" (p. 66)

Companies play the communicator and educator role in the investment community when they disclose strategic planning information. In a later work, Higgins and Diffenbach (1989a) state that,

"*Strategic communications may vary from a specific description of corporate strategy to a more generalized discussion of the company's strategic planning process. Furthermore, the shaping of strategy messages and the selection of appropriate communication channels must be tailored to specific target audiences.*" (p. 133)

Annual reports are an increasingly common channel for communicating corporate strategy (Diffenbach and Higgins, 1987). However, Higgins and Diffenbach (1989a) find that analysts regard annual reports as less useful because they lack comprehensive discussion of corporate strategic plans. Management presentations are the most significant source of strategic planning information for analysts. Overall, communicating corporate strategy helps firms to build their strategic credibility (Higgins and Diffenbach, 1989b). Failure to provide sufficient strategic information may result in penalties, such as ineffective partnerships with stakeholders (Higgins and Bannister, 1992).

2.4.2 Forward-looking Strategic Information Disclosure

Unlike early literature focusing on the concept of "corporate communication of strategy," subsequent studies investigate corporate strategic information disclosure in annual reports and 10-K filings, and provide more specific definitions of strategic information disclosure. For example, Bhojraj et al. (2004) describe strategic information disclosure as firms providing information about their future plans (i.e.,

information regarding corporate planned strategies to cope with increased competition). Similarly, Santema et al. (2005) define strategy disclosure as,

"*The revelation of information an organization decides to share with its stakeholders on the strategy it is pursuing and going to pursue in the future.*" (p. 354)

In addition to companies' annual and form 10-K filings, research explores strategic information disclosure in investor relations meetings and press releases. Within these studies, strategy-related disclosure mainly includes forward-looking, qualitative, and subjective information. Often, it reflects managerial intentions; for example, information about what the management has in mind for the firm's future (Ferreira and Rezende, 2007; Gu and Li, 2007). Marston (2008) conducts a survey to investigate the relative importance of provision of different types of information on future prospects at meetings. The author suggests that corporate information on future prospects contains various aspects of corporate strategies. Specifically, short-term strategy, long-term strategy, and main new products and developments are the most vital topics regarding future prospects.

Recent studies focus on a wider range of channels for strategic information disclosure, such as firm websites, earnings announcements, conference calls, presentations, and integrated reports. However, the general concepts of strategic information disclosure in these studies remain unchanged. The disclosure of strategic information refers to information about the future actions of companies (Sánchez et al., 2011), their plans for the future (Agapova and Volkov, 2019; Whittington et al., 2016), corporate strategic focus, and future orientation (Menicucci, 2018). Similarly, Lu and Tucker (2012) define strategic plan disclosure as information about specific initiatives, strategies, priorities, and action plans. They suggest that such information is largely qualitative. Thakor (2015) points out that strategic information disclosure can be carried out in the narrative part of the firm's annual report, or in communication with the press or analysts. Such information is qualitative and subjective in nature; thus, there are various ways to

explain whether these strategies are the best for the company. Due to the qualitative and subjective nature of strategy-related disclosure, such information is difficult to verify directly (Ferreira and Rezende, 2007). However, Baginski et al. (2017) demonstrate that Italian listed firms' strategic plans contain both narrative information and information connecting the narrative to specific financial goals and whether they were achieved.

2.4.3 Corporate and Business-related Strategic Information Disclosure

Compared with the research mentioned above, studies in this group provide a wider range of strategic information disclosure criteria, including general information, forward-looking strategic information, information about past executed strategic actions, and business strategy-related information.

In an early study, Gray et al. (1995) indicate that strategic information has obvious decision relevance to investors. They investigate a wide range of strategic information disclosure in companies' annual reports, including information about general corporate characteristics, corporate strategy, acquisition and disposals, research and development, and future prospects. Similarly, numerous studies employ similar criteria to examine strategic information disclosure in annual reports (Chau and Gray, 2010; Chau and Gray, 2002; Ferguson et al., 2002; Hamrouni et al., 2017; Lim et al., 2007; Meek et al., 1995; Qu et al., 2013; Wang et al., 2008). More recently, Louie et al. (2019) indicate that strategic and forward-looking information is directly linked with how firms make decisions. In their study, corporate strategic information disclosure in annual reports includes general strategy, financial strategy, marketing strategy, social strategy, current impacts of the strategy and future impacts of the strategy.

Numerous studies consider strategic information disclosure as containing both corporate and business strategy-related information. Corporate strategy focuses on the ways of managing a set of businesses; by contrast, business strategy focuses on the

ways in which each business unit of a company contends within a specific market (Bowman and Helfat, 2001). Sieber et al. (2014) state that,

"*A comprehensive disclosure of strategy information essentially encompasses prognostic information on businesses, strategic objectives, the resulting business strategies, and implementation priorities. From an investor decision making perspective, these insights into a firm's business strategies are of considerable relevance as they shed light on long-term managerial actions. Strategy disclosure therefore constitutes a key element in linking historical information presented in the financial statements to prospective cash flow forecasting.*" (p. 264)

Accordingly, they investigate strategy disclosure as containing information about strategic analysis of corporate and business environments, corporate and business strategy, and strategy implementation.

Recently, Sukhari and De Villiers (2019) point out that business model and strategy disclosures are often confused due to the lack of a commonly agreed definition of the business model. Their study uses the definition,

"*A company's strategy relates to its future value creation plans and the business model (BM) can be described as an integral part of the strategy that provides additional information regarding the implementation of the strategy.*" (p. 708)

Thus, the authors separately investigate strategy disclosure and business model disclosure; they show that business model and strategy disclosures both provide relevant information to investors. In comparison, Athanasakou et al. (2019) and Athanasakou et al. (2020) do not distinguish empirically between business model and strategy disclosure. They use the term strategy-related reporting, which refers to both business model and strategy disclosure.

The existing studies also emphasize the past aspects of corporate and business-related strategic information disclosure. For example, Santema and Van de Rijt (2001) set the criteria to determine strategy disclosure, including mission, goal, objective, corporate

strategy, strategy consistency, monitoring, business unit goals, business unit strategies, strategic actions executed in the past year, and strategic actions planned to be executed in the next year. Then, emphasize that due to the accountability of the company's strategy, the relevant aspects of the past are as important as those future-oriented aspects, because past strategic information is useful for evaluating the future. Similarly, Morris and Tronnes (2018) define voluntary strategy disclosure as partly forward-looking, and state that,

"*Voluntary strategy disclosures most likely would cover specific actions taken to implement a firm's strategy, rather than an abstract notion of strategy. Only such concrete actions are observable, so they must proxy for a firm's (unobservable) strategy*." (p. 425)

This section provides a brief summary of the literature relating to various concepts and criteria of strategic information. Early studies preliminarily investigate the role of corporate communication of strategy; however, they do not provide a specific definition of strategic information disclosure. Later studies examine forward-looking strategic information disclosure, and provide relatively specific and consistent concepts of strategic information. Generally, the disclosure of strategic information refers to information about specific initiatives, future actions and plans of firms, corporate strategic focus, and future prospects. Another series of studies attempt to investigate a broader scope of strategic information disclosure. Here the content of strategic information disclosure includes the past aspects of strategic information, forward-looking strategic information, corporate strategy information, and business-strategy-related information. Due to the wide scope of strategic information, these studies do not provide a common definition of strategic information. A summary of these studies, including concepts of strategic information and channels of release, can be found in Table 2.2.

2.5 Theories and Hypotheses for Strategic Information Disclosure

This section examines theories related to corporate strategic information disclosure, and various incentives under these theories for explaining strategic information disclosure decisions. The disclosure framework is based on three main theories: information asymmetry, agency theory, and proprietary costs theory. In light of these theories, conflicting incentives (capital-market-related incentives, investor-management disagreement incentives, partner-related incentives, labor market monitoring incentives, and product market competition incentives) that influence managers to make different strategic information disclosure decisions to multiple audiences (potential investors, existing investors, boards of directors, information intermediaries, partners, and competitors) are proposed in the literature. Figure 2.1 provides the strategic information disclosure framework, and Table 2.3 summarises various research questions and hypotheses implied by the framework.

2.5.1 Information Problem

One critical problem for any economy is the optimal allocation of capital market resources to investment opportunities. However, information and incentive problems between insiders and outsiders result in adverse selection problems and significantly hinder the efficient allocation of savings in the capital market (Healy and Palepu, 2001). Akerlof (1970) proposes the “lemons” problem, which describes the issue of information differences between two parties. Due to the unobservability of product quality in the market, there will be asymmetric information about product quality between sellers and buyers. Without relevant information, it is difficult for buyers to distinguish whether a product is good or bad. This situation will force all products to become the same price. If sellers with high-quality products cannot differentiate themselves from others, the sellers with low-quality products are likely to conceal their quality. Such information asymmetry problems can result in adverse selection in the market.

Table 2. 2 Summary of concepts of strategic information employed in studies

Study name	Strategic information concept	Channel of release
Panel A: Communicating corporate strategy		
Higgins et al. (1985; Journal of Business Strategy)	Information about the strategy per se and the strategic planning process. A company's strategic plan: a plan which describe the future direction of the company including the reallocation of assets and resources. A company's strategic planning system: a system by which the company formulates or reformulates its strategic plan.	Annual reports and 10K reports Presentations Newspapers and other publications
Diffenbach et al. (1987; Business Horizons)	Communicate the corporate strategy, its long-term direction, and its objectives.	Annual reports
Higgins et al. (1989a; Long Range Planning)	Communicating corporate strategy refers to reporting on their strategic plans for the future.	Presentations, annual reports, press releases, newspaper, and other publications
Higgins et al. (1992; Long Range Planning)	Information about corporate strategic intentions and direction.	Annual reports
Panel B: Forward-looking strategic information		
Bhojraj et al. (2004; Accounting Review)	Voluntary disclosure of future strategic plans (i.e., statements regarding planned corporate strategies to cope with increased competition).	Annual and Form 10-K filings
Santema et al. (2005; European Business Review)	The disclosure of information a company choose to share with its stakeholders about the strategies it is pursuing and going to pursue in the future	Annual reports
Gu et al. (2007; Journal of Accounting Research)	Strategy-related disclosure mainly contains forward-looking, qualitative, and subjective information. The nature of strategy-related disclosure is qualitative and subjective.	Press releases
Ferreira et al. (2007; RAND Journal of Economics)	Disclosure of information regarding corporate strategy. Information about corporate strategy reflects managerial intentions, that is, information about the management's thoughts on the future of the company.	Not specified
Marston (2008; Accounting and business research)	Information about corporate future prospects. Short-term strategy, major new products and developments and long-term strategy were the most vital topics relating to future prospects.	Investor relations meetings
Sánchez et al. (2011; Accounting, Auditing & Accountability Journal)	Strategic information is corporate information about their future actions.	Firm websites
Lu et al. (2012; Financial Management)	Strategic plan disclosure: information about specific initiatives, strategies, priorities, and action plans. Such type of information is largely qualitative.	Announcement Press release Conference call

Thakor (2015; Journal of Financial Intermediation)	Strategic information disclosures are sometimes in the narrative section of the firm's annual report and sometimes in discussions with the press or analysts. Strategic information, such as corporate/managerial vision, is qualitative and subjective in nature, and thus correlated with various interpretations regarding whether these strategies are best for the company.	Annual reports Discussions with the press or analysts
Whittington et al. (2016; Strategic Management Journal)	The broader plans for the future involved in strategy presentations.	Strategy presentations
Baginski et al. (2017; European Accounting Review)	Forward-looking strategic plan disclosures. They classify the disclosure into three groups: narrative disclosures, performance targets, and other detailed disclosures.	Strategic plan presentations
Menicucc (2018; Journal of Applied Accounting Research)	Forward-looking information about corporate strategic focus and future orientation.	Integrated reports
Agapova et al. (2019; Journal of Banking and Finance)	Strategic information refers to information about firm's future plans.	Conference calls Conference presentations
Panel C: Corporate and business related strategic information disclosure		
Gray et al. (1995; Journal of International Financial Management and Accounting) Meek et al. (1995; Journal of International Business Studies) Chau et al. (2002; International Journal of Accounting) Ferguson et al. (2002; Journal of International Financial Management and Accounting) Wang et al. (2008; Journal of International Accounting, Auditing and Taxation) Chau et al. (2010; Journal of International Accounting, Auditing and Taxation)	they show that strategic information has obvious decision relevance to investors. Strategic information includes five subgroups: (1) general corporate characteristics, (2) corporate strategy, (3) acquisitions and disposals, (4) research and development, (5) future prospects information.	Annual reports
Santema et al. (2001; European Management Journal)	Strategy disclosure includes: mission, goal, objective, corporate strategy, consistency, monitoring, business unit goals, business unit strategies, action plans (ex-post), action plans (ex-ante).	Annual reports

Qu et al. (2013; Managerial Auditing Journa) Hamrouni et al. (2017; Review of Accounting and Finance)	Strategic information includes five subgroups: (1) general information about firm, (2) corporate strategy, (3) R&D activities, (4) management discussion and analysis, (5) future prospects information.	Annual reports
Siebe et al. (2014; Business Research)	A comprehensive strategic information disclosure essentially includes prognostic information on businesses, strategic objectives, the resulting business strategies, and implementation priorities. Such information reflects long-term managerial actions.	Annual reports
Morris et al. (2018; Accounting Research Journal)	Voluntary strategic information disclosure contains information about specific actions taken to implement a company's strategy, rather than an abstract notion of strategy.	Annual reports
Louie et al. (2019; Accounting Research Journal)	Strategic and forward-looking information is directly linked with how firms make decisions. Strategic voluntary disclosure includes: general strategy, financial strategy, marketing strategy, social strategy, current effects and future effects on the strategy.	Annual reports
Sukhari et al. (2019; Australian Accounting Review)	A firm's strategy is associated with its future value creation plans. The firm's business model can be viewed as an integral part of the strategy, which provides additional information concerning the implementation of the firm's strategy.	Integrated reports
Athanasakou et al. (2019; Working paper) Athanasako et al. (2020; European Accounting Review)	This study does not distinguish empirically between business model and strategy disclosure. They use the term strategy-related reporting which refers to both business model and strategy disclosure.	Annual reports

In disclosure literature, information asymmetry refers to different parties with different levels of access to a company's private information (Brown and Hillegeist, 2007). Information asymmetry can lead to lower liquidity, higher transaction costs, and mispricing of a company's shares (Birt et al., 2006). Studies suggest that information disclosure as a mechanism plays a vital role in mitigating such information problems (Agapova and Volkov, 2019; Gu and Li, 2007; Healy and Palepu, 2001; Lu and Tucker, 2012). In addition, Verrecchia (2001) emphasizes the importance of information asymmetry reduction, suggesting that it could be the underlying basis for a comprehensive disclosure theory. Therefore, based on information asymmetry theory, existing studies propose conflicting incentives for explaining corporate voluntary disclosure about strategies (e.g., Agapova and Volkov, 2019; Bhojraj et al., 2004; Ferreira and Rezende, 2007; Gray et al., 1995; Lu and Tucker, 2012; Meek et al., 1995; Thakor, 2015). These incentives influence managers to make different strategic information disclosure decisions to different audiences. Specifically, capital market related incentives focus on potential investors; investor-management disagreement incentives focus on both potential and existing investors; and partner related incentives are directed to stakeholders other than investors.

Capital market related incentives

In the context of capital market pressures, companies compete with each other in order to attract external financing. However, investors are uncertain about their quality. Consequently, potential investors need information to assess firms' current and future performance and thus make investment decisions. By providing additional information, a company can meet investors' information needs and decrease investors' uncertainty, thereby distinguishing itself from other companies and reducing its cost of capital (Gray et al., 1995; Lu and Tucker, 2012; Meek et al., 1995; Santema et al., 2005). Bhojraj et al. (2004) point out that companies that require to access capital markets more regularly are encouraged to signal those markets about their strategies to cope with new risks and exploit emerging opportunities. In general, capital market pressures give incentives to

companies to release strategic information as long as the expected benefits of disclosure exceed related costs.

Investor-management disagreement incentives

In contrast to the above mentioned information asymmetry reduction benefits of voluntary disclosure in corporate financing, several studies suggest that investor-management disagreement significantly affects corporate financing decisions (Allen and Gale, 1999; Dittmar and Thakor, 2007; Garmaise, 2001). Investor-management disagreement arises when investors differently interpret information provided by management. With respect to strategic information disclosure, such information is subjective in nature; thus, investors' interpretations may differ due to their heterogeneous beliefs. Consequently, investors may be reluctant to provide capital (Agapova and Volkov, 2019). Thakor's (2015) theory suggests that, when there is investor-management disagreement, strategic information disclosure may result in heterogeneous beliefs among investors, and such disagreement costs may outweigh the information asymmetry reduction benefits. Strategic information disclosure may also cause a transfer of decision rights from managers to investors. When they withhold strategic information, managers retain the right to decide to start a new project. Once the strategic information is disclosed, this decision will be transferred to investors. Potential investors control the project by providing or declining to provide funds; existing investors either support the project by keeping (or increasing) their holdings of the company's shares, or reducing their shares when disagreements arise (Agapova and Volkov, 2019). In general, investor-management disagreement costs give incentives to companies, whose investors are more likely to agree with, to withhold information about corporate strategies.

Partner related incentives

The existing studies mainly examine information disclosure from the perspective of capital market investors (e.g., Bhojraj et al., 2004; Gray et al., 1995; Lu and Tucker,

2012; Meek et al., 1995; Santema et al., 2005). Healy and Palepu (2001) state that other stakeholders may also be interested in corporate private information; thus, information disclosure can be directed to stakeholders other than investors. Ferreira and Rezende (2007) fill this theoretical gap by modelling voluntary disclosures of information about corporate strategies. They indicate that investors and other stakeholders care about the disclosure of corporate strategy related information because such information is likely to reflect managerial intentions. They provide a theory to explain corporate strategic information disclosure when there is information asymmetry between partners of the company (e.g., employees, suppliers, strategic partners, or any other stakeholders) and managers. They assume that managers' visions are private information, and disclosing such information implies that managers will commit to implementing innovations in certain activities. This gives incentives to employees to put more effort into developing ideas that are related to those activities. Consequently, managers expect their partners to undertake investments that are specific to certain strategic directions; thus, they have incentives to provide additional information about corporate strategies to partners, because information about the company's future plans is useful for their stakeholders to assess the profitability of investments. Ferreira and Rezende (2007) also suggest that managerial strategic information is credible because managers are concerned about their reputations.

2.5.2 Agency Problem

The agency problem arises from the differences in interests between principals and agents (Healy and Palepu, 2001; Jensen and Meckling, 1976). The agent has full access to the information in the company, and therefore, tends to take action to maximize their own interests, even though their decisions may harm the benefits of the principal. However, information asymmetry makes it difficult and expensive for the principal to continuously monitor the agent's behaviour (Jensen and Meckling, 1976). Such conflicting incentives between them generate additional agency costs. There are several ways to monitor managers, including contracting, disclosure, corporate governance

mechanisms, information intermediaries, and corporate control contests, and so on (Healy and Palepu, 2001). In the context of labor market monitoring, researchers generate different theoretical predictions of corporate voluntary information disclosure.

Disclosure studies show that corporate governance plays a monitoring role in companies' daily operations and such monitoring can minimize agency costs. In an early study, Jensen and Meckling (1976) suggest that substantial shareholders have greater powers and incentives to oversee managers because their wealth is related to the company's performance; consequently, they have higher demand for additional information. Managerial ownership also supports the interests of the management and shareholders; therefore, increased managerial ownership reduces the need for shareholders to monitor managers' actions. This situation raises disincentives for the company's manager to disclose more additional information. Later, Huddart (1993) theoretically predicts that concentrating share ownership leads the largest shareholders to acquire more precise signals of management efforts, implying that blockholders seek to align the interests of managers with their own, and thus frequently require information disclosure. Healy and Palepu (2001) conclude that labor market monitoring (optimal contracts, corporate governance mechanisms, information intermediaries) helps external owners to monitor and discipline managers, and thus gives incentives to managers to make the optimal disclosure decisions.

Thakor (2015) develops a theory to explain the association between corporate governance and strategic information disclosure and derives a result that is the exact opposite of the usual agency argument mentioned above. Specifically, the results show that improved corporate governance results in lower executive compensation and less voluntary disclosure about corporate strategies. Enhancing corporate governance reduces the burden of managerial compensation and gives incentives to managers to try harder. Accordingly, better governance with lower executive compensation generates positive wealth results for the shareholders, whether managers disclose or not. Due to

the investor-management disagreement costs (investors refuse to provide capital to the company) of strategic information disclosure, withholding strategic information generates more benefits for companies with better corporate governance. Ferreira and Rezende (2007) also provide a theoretical prediction that labor market monitoring gives incentives to managers to withhold strategic information. Managers differ in their ability to predict the future. Those with greater ability always have more accurate information. If a manager proposes a given strategic direction and later chooses to change it, this will inform the market that their initial information was not accurate. Correspondingly, the labor market may perceive the manager as lacking ability. However, if managers are reluctant to change a plan after disclosing information about corporate strategic direction, this may result in inefficient project implementation decisions. Therefore, managers have incentives to withhold strategic information under labor market monitoring pressure.

2.5.3 Proprietary Costs

Proprietary costs theory asserts that managers have incentives to release information only if there is no disclosure related cost (Milgrom, 1981). Unlike other theories, proprietary costs theory considers the costs of disclosure rather than the benefits. These costs arise when private information is disclosed; such information may be exploited by competitors, thus threatening the company's competitive position (Dye, 2001; Healy and Palepu, 2001). In general, proprietary costs theory suggests that product market competition pressure gives incentives to managers to withhold sensitive information.

Verrecchia (1983) constructs a model of the relationship between proprietary costs and information disclosure, which provides evidence that private information is not released when proprietary costs exist. It is hard for investors to determine whether information is retained by managers because it stands for "bad news" or because the information is not good enough to cover the related costs of disclosing it. Verrecchia (1983) finds that the market responds less negatively when proprietary costs are absent; as a result,

managers choose to retain the information if the proprietary costs are higher than the market's expected discount. Darrough and Stoughton (1990) suggest that disclosure related costs rise as competition increases; thus, the disclosure of proprietary information is discouraged. Wagenhofer (1990) also points out that when proprietary costs are high and the risk of adverse action by competitors is quite low, companies tend to choose partial rather than full disclosure. Hence, a low level of information disclosure can help a company to prevent competitors from taking action which may reduce its competitive position.

Based on the above discussions, proprietary costs theory suggests that product market competition can be introduced to explain companies' disclosure practices. Managers have disincentives to release private information that may harm a company's competitive position, even if the low level of disclosure makes it more difficult and costly to raise capital (Healy and Palepu, 2001; Depoers and Jeanjean, 2010). In the context of strategic information disclosure, the assessment of proprietary costs is likely to be more sensitive due to the confidential nature of strategic information. Cotter et al. (2011) demonstrate that strategic information disclosure and forward-looking information disclosure are often explained using proprietary costs theory.

Overall, this section explains the strategic information disclosure framework based on three main theories: information asymmetry, agency theory, and proprietary costs theory. Existing research on information asymmetry proposes three conflicting incentives for explaining strategic information disclosure. These conflicting incentives lead managers to make different disclosure decisions for different audiences. Specifically, capital market related incentives focus on potential investors; investor-management disagreement incentives focus on both potential and existing investors; partner related incentives are directed to stakeholders other than investors. Agency theory suggests that labor market monitoring incentives also play an important role in explaining strategic information disclosure. Under monitoring and discipline pressures,

managers make different strategic information disclosure decisions to reduce the agency problem or to protect their own reputation. Due to the sensitive nature of strategic information, proprietary costs theory suggests that product market competition gives incentives to managers to withhold strategic information to avoid threats from competitors. In general, managers have conflicting incentives to make different strategic information disclosure decisions to various audiences. To make optimal disclosure decisions, they need to make a trade-off between strategic information disclosure costs and benefits. Figure 2.1 provides the strategic information disclosure framework, and Table 2.3 summarises main research questions and various hypotheses implied by this framework.

2.6 Determinants and Consequences of Strategic Information Disclosure (evidence)

Based on the strategic information disclosure framework established in section 2.5, this section discusses existing empirical studies that investigate various determinants and consequences of strategic information disclosure. A summary of these studies can be found in Table 2.4.

2.6.1 Factors Influencing Strategic Information Disclosure

Capital market related factors

An early study by Gray et al. (1995) examines the effect of international capital market pressures on corporate voluntary disclosures by US and UK multinationals. They find that the international listing factor is important in explaining strategic information disclosure, suggesting that international capital market pressures promote strategic information disclosure by companies that participate in this market. Similarly, Meek et al. (1995) investigate factors affecting voluntary disclosure by US, UK, and continental European multinationals. Their results also show that participation in the international capital market is significantly associated with additional strategic information disclosure. Research focusing on Asian markets finds similar empirical evidence. For

Figure 2.1 Strategic information disclosure framework

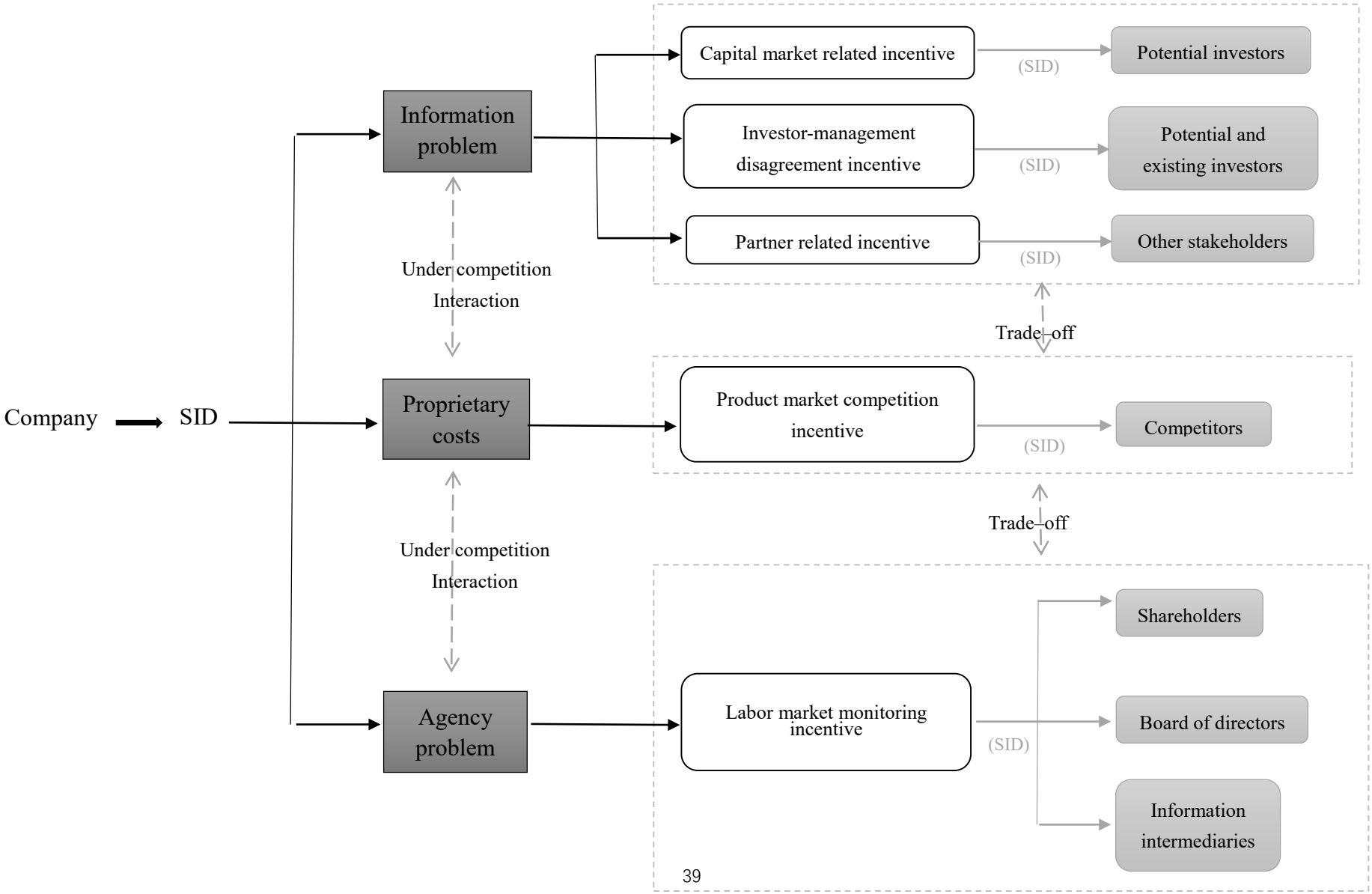


Table 2. 3 Research questions and hypotheses implied by SID framework

Research questions	**Incentive related hypotheses**
How do capital market pressures influence the quantity and quality of corporate strategic information disclosure? Does international listing factor affect corporate strategic information disclosure decisions?	Capital market hypotheses
How do managers make strategic information disclosure decisions when there is investor-management disagreement? How do managers balance information asymmetry reduction benefits and investor-management disagreement costs of strategic information disclosure?	Investor-management disagreement hypotheses
How do managers make strategic information disclosure decisions directed to stakeholders other than investors?	Partner related incentive hypotheses
How do corporate governance mechanisms affect the quantity and quality of strategic information disclosure? Do information intermediaries help external owners to monitor and discipline managers' disclosure decisions? How does the managers' reputation concerns influence their strategic information disclosure decisions? Does labor market monitoring pressure enhance the quality of corporate strategic disclosure?	Labor market monitoring hypotheses
How does product market competition influence corporate strategic information disclosure? How does managers' disclosure tone change when companies face product market competition? How do managers balance information and agency problems reduction benefits and the disclosure proprietary costs of strategic information disclosure?	Product market competition hypotheses
How do potential and existing investor react to corporate strategic information? How do analysts respond to corporate strategic information disclosure? Does corporate strategic information disclosure affect analysts' forecast accuracy? Does corporate strategic information disclosure enhance corporate or CEO reputation?	Economic consequences related hypotheses

example, Ferguson et al. (2002) suggest that international capital market pressures give incentives to companies (former wholly state-owned PRC companies listed on the SEHK) to disclosure more strategic information. Wang et al. (2008) also find a positive association between strategic information disclosure and the proportion of state or foreign ownership. The potential reason is that strategic information reduces information asymmetry and enhances corporate reputation, thus helping companies to attract more international capital. More recently, Morris and Tronnes (2018) provide evidence that multi-country listing (Asian and European companies listed on the NYSE) leads to an increase in strategic information disclosure due to additional demands for information.

Bhojraj et al. (2004) investigate the disclosure decisions of 124 electric utilities in the US for different target audiences. The authors use three proxies to capture capital market-related incentives, including dispersion of analysts' forecasts, institutional ownership, and the number of institutional investors. Their results show that in a deregulated environment, electric utilities are encouraged to disclose information about their future strategies to capital market participants; by doing this, these companies can enhance their operational and financial capability. Similarly, looking at S&P 500 companies, Lu and Tucker (2012) examine how capital market valuation incentives affect corporate strategic information disclosure decisions. Their results show that firms tend to disclose strategic plan information after an earnings decline, implying that capital market related pressures encourage companies to disclose strategic information. They suggest that managers tend to withhold earning guidance when their firm's performance is poor; however, in order to meet investors' demands for information, managers tend to provide more strategic plan information as compensation for the omitted earnings guidance.

Investor-management disagreement

Addressing the issue of strategic information disclosure when there is fundamental disagreement between investors and management, Agapova and Volkov (2019) use proxy proposals, vote recommendation, and actual voting to measure the disagreement, and provide empirical evidence to support the theoretical predictions of Thakor (2015). Specifically, based on non-financial firms included in the S&P 1500 index, they find that companies with higher intrinsic value and lower levels of investor-management disagreement have disincentives to provide additional strategic information. The potential reason may be that strategic information disclosure cause disagreement between managers and investors and affect the allocation of control rights over productive activities.

Corporate governance related factors

In an early study, Chau and Gray (2002) investigate the influence of ownership structure on voluntary disclosures in companies listed in Hong Kong and Singapore stock market. Their results show that companies with wider outside ownership are more likely to provide additional strategic information. In particular, family-controlled companies tend to disclose less. Later, Chau and Gray (2010) explore the influences of family ownership and board independence on voluntary disclosure among firms listed in Hong Kong stock markets. They show that disclosure decreases with an increase in family ownership when the family shareholding is 25% or less; however, there is a positive association between strategic information disclosure and family ownership when family shareholding is more than 25%. They also find that having an independent chairman is associated with increased strategic information disclosure. Meanwhile, the presence of an independent chairman tends to mitigate the impact of family ownership on strategic information disclosure. Firms with independent non-executive directors also tend to have higher disclosure; however, the role of such directors is mitigated by an independent chairman. Studies based on a sample of companies in Australia also investigate how board independence and family ownership affect corporate voluntary

disclosure. For example, Lim et al., (2007) show that firms with more independent boards are correlated with a higher level of strategic information; Louie et al., (2019) indicate that family firms disclose more future and strategic information than non-family firms. A recent study by Hassan and Lahyani (2019) investigates the effects of media and board independence on strategic information released by non-financial listed companies in the UAE. The authors find that companies disclose less strategic information when they face a negative media tone. Furthermore, independent non-executive directors reduce the level of strategic information disclosure and have a negative mitigating impact on the negative media tone-strategic information disclosure association, implying that independent non-executive directors tend to adopt a conservative approach, and reduce the level of strategic information disclosure when firms face negative publicity.

Research also suggests that CEO duality (the chief executive officer is also chairman of the board of directors) significantly influences corporate strategic information disclosure decisions. However, the results are mixed. Gul et al. (2004) provide empirical evidence from firms listed in the Hong Kong Stock Exchange, showing that companies with CEO duality disclose significantly less strategic information. In contrast, Sánchez et al. (2011) investigate the association between corporate governance and strategic information disclosed by Spanish listed companies on their websites. Their results indicate that CEO-dominated companies have lower meeting frequency, and thus release more strategic information on the Internet.

Two studies examine the role of firm characteristics in explaining corporate strategic information disclosure. Corporate profitability is a common factor that has been investigated in voluntary disclosure research. Menicucci (2018) explores forward-looking information in integrated reporting and finds that companies with high profitability are correlated with a lower level of strategy-related information. Morris and Tronnes (2018) investigate the determinants of strategic information disclosure

made by 17 largest companies in Asian and European countries. They find that companies with greater firm-level disclosure propensity (measured as the first principal component from a principal components analysis of firm size, leverage, number of business segments, equity raised and debt raised in the past year, and profitability), or with a Big Four auditor,[4] are correlated with a higher level of strategic information.

Agapova and Volkov (2019) investigate the association between overall corporate governance quality and strategic information disclosure. They employ the E-index to measure the corporate governance quality (a count of six provisions from the firms' documents obtained from ISS). Their results show that better corporate governance is associated with lower executive compensation and less strategic information disclosure. They suggest that enhancing corporate governance quality decreases the burden of managerial compensation and gives incentives to managers to try harder. Strategic information disclosure may also cause investor-management disagreement; therefore, withholding strategic information is better for firms with good corporate governance quality, in line with the theoretical predictions of Thakor (2015).

Corporate governance and culture are different across countries. Therefore, national difference effects are important factors in explaining strategic information disclosure. For example, Meek et al. (1995) point out that national influences are detected in strategic information disclosure; specifically, continental European companies release significantly more strategic information than US and UK companies. Santema et al. (2005) find significant differences in strategic information disclosed by companies from five European countries, suggesting that national differences in corporate governance and culture affect the level of corporate strategic information disclosure. Examining 17 largest companies in Asian and European countries, Morris and Tronnes (2018) show that companies from stakeholder-oriented countries, countries with higher

[4] The "Big Four" refers to the four largest accounting firms in the US, including Deloitte, Ernst & Young, PricewaterhouseCoopers, and Klynveld Peat Marwick Goerdeler.

levels of financial transparency, or countries with lower secrecy disclose more strategic information.

Product market competition

Using a sample of 124 electric utilities in US, an early study by Bhojraj et al. (2004) explores how companies make strategic information disclosure decisions when they face product market competition pressures. Consistent with the prediction of proprietary costs theory, they find that product market competition reduces the level of strategic information disclosure, but only after regulatory concerns have been resolved. Similarly, based on S&P 500 companies, Lu and Tucker (2012) show that companies in the growth stage of their life cycle tend to reduce the level of strategic plan disclosure; however, turnaround companies tend to provide additional information about their strategic plans. The potential reason could be that proprietary disclosure costs are higher for companies in the growth stage than companies in the turnaround stage, because these firms tend to develop unique technologies, products, business processes, and strategies. Later, based on 222 banks in the US, Burks et al. (2018) show that banks provide more press releases when competition increases. At the same time, the disclosure tone becomes more negative, implying that firms' incentives to release bad news to deter potential entrants are stronger than their capital market incentives to release good news.

2.6.2 Consequences of Strategic Information Disclosure

Stock price

One of the most important economic consequences of corporate strategic information disclosure is significant stock price fluctuations. The earliest research proposes that corporate communication of strategic capabilities may be an effective way to boost both credibility and share price (Higgins and Diffenbach, 1989b). Later, Higgins and Bannister (1992) survey the US-based security analysts to evaluate companies' strategic capability, corporate communication practices, past performance, CEO

credibility, and overall strategic credibility. They suggest that if firms fail to sufficiently inform key stakeholders of their strategic intentions and direction, this may lead to an ineffective or failed partnership. Furthermore, high strategic credibility companies are considered as having higher strategic capability, better performance, more effective communications, and higher CEO credibility; therefore, strategic credibility may have a positive, quantifiable impact on share price.

Gu and Li (2007) investigate stock price reaction to strategic information disclosure for US high-tech companies. Consistent with the predictions of previous research, their results show that strategic information disclosure leads to a positive stock price reaction, implying that investors are likely to consider such disclosure as credible good news. They also find that insider purchase prior to the disclosure increases the strategic information disclosure credibility, especially for companies with higher levels of information asymmetries. A positive stock reaction to strategic information disclosure is also found by Whittington et al. (2016). By examining the influence of corporate strategy presentations by CEOs on stock price, they show that stock price reaction is positively associated with strategy presentation; such reactions are stronger for new CEOs. More recently, Mavis et al. (2019) conduct an event study to analyse stock market respond to Bayer's strategic integrity (the alignment between a company's released strategy and its following strategic actions). They find that strategic integrity generates positive abnormal returns, suggesting that investors reward the consistency between a company's released strategy and its following strategic actions.

Analyst and investor reactions

A company's long-term corporate strategy affects the evaluation of its stock by analysts when the strategy is discussed via corporate advertising, executive presentations, annual reports, and other channels (Higgins and Diffenbach, 1985). However, corporate information events focusing on strategic information generate fewer analyst revision activities in a shorter time period than corporate information events focusing on

financial information, because strategic information is less accessible and difficult to be incorporated into valuation models (Bagnoli et al., 2005a). In addition, analysts and investors respond more slowly to strategic information than financial information (Bagnoli et al., 2005b).

Several recent studies provide empirical evidence about the impacts of strategic information disclosure on analysts' and investors' reactions. Based on strategic plan presentations by Milan Stock Exchange companies, Baginski et al. (2017) suggest that strategic plan disclosure leads to a positive stock price reaction and an increase in the accuracy of analysts' earnings forecasts, implying that strategic plan disclosure is value relevant. Meanwhile, the number of analysts following increases with a high level of corporate strategic information disclosure (Hamrouni et al., 2017).

More recently, Bozanic et al. (2018) divide forward-looking statements (FLS) into different groups, including earnings related FLS, non-earnings related FLS, quantitative FLS, non-quantitative FLS, and other FLS. Other FLS contains information related to corporate strategies. Based on the US market, they find that, consistent with earnings forecasts information, strategy related information triggers significant analyst and investor reactions. In addition, companies choose to disclose more other FLS and less earnings forecasts information when investor uncertainty is higher, suggesting that managers are reluctant to discuss future earnings, rather than being reluctant to provide other estimates. Thus, managers tend to change the content of their disclosures. Later, studying the UK market, Athanasakou et al. (2019) find that strategy focused disclosure helps investors resolve uncertainty. Furthermore, strategy related commentary increases the speed at which information is incorporated into the share price after the publication of the annual report.

Stock liquidity

One of the most important purposes of information disclosure is to reduce the level of information asymmetry between insiders and outsiders, and to improve a company's stock liquidity and shareholder return. Specifically, Grüning (2011) finds a negative association between strategic information disclosure and the bid-ask spread for companies from France, Germany, UK; also, the probability of information based trading (available private information) decreases in line with increasing disclosure levels. These results provide evidence to confirm the information asymmetry reduction effect of corporate strategic information disclosure. In a similar vein, but focusing on the US market, Lu and Tucker (2012) find that strategic plan disclosure is associated with an increase in market depths and a decrease in bid-ask spreads, implying that strategic plan disclosure reduces information asymmetry and improves stock liquidity. Barth et al. (2017) examine the economic consequences associated with integrated report quality for firms listed in South Africa. Their findings suggest that companies with a higher quality of reporting on strategic focus and future orientation have smaller bid-ask spreads, and thus higher liquidity. In addition, the quality of such reporting positively influences firm value. Similarly, Uyar and Kılıç (2012) suggest that strategic information disclosure has a positive influence on firm value.

Cost of capital

Empirical studies provide consistent results on the impact of strategic information disclosure on the cost of capital. Based on UK listed firms, Gietzmann and Ireland (2005) find a significant negative association between strategic disclosure quality and the cost of capital. Later, Sieber et al. (2014) find that voluntary strategy disclosure is negatively correlated with the cost of equity, suggesting that strategic information disclosure reduces information asymmetry, and such information is useful for investors. More recently, Athanasakou et al. (2020) indicate that strategy related disclosure in annual reports of UK companies significantly reduces the cost of equity capital. These

studies show that companies with strategic information disclosure benefit from lower costs of capital

IPO

Two studies have been identified exploring the impacts of information disclosure on IPO discount (a consequence of information asymmetry between the IPO company and investors) and IPO returns (the difference between IPO offer price and the market price). Chahine and Filatotchev (2008) analyse how strategic information disclosure influences the stock market performance of IPO companies in France. Their results show that there is a curvilinear (inverted U-shape) association between strategic information disclosure and the IPO discount. Specifically, strategic information disclosure moderates information asymmetry between the IPO company and outsiders, consequently reducing the IPO discount. However, given the existence of proprietary cost, extensive strategic information disclosure may harm the company's competitive advantage, thus, resulting in the increasing of the IPO discount. They also suggest that the type of information disclosure is more important than the quantity of information disclosure in explaining IPO discount. Based on IPO prospectuses of 57 biotechnology firms listed on the NASDAQ, Gao et al. (2008) find that the corporate strategy signal is not strong enough to influence the first-day initial returns. The authors suggest that first-day investors may pay less attention to strategic information. Strategic information also needs time to be well distributed and digested. However, consistent communication of strategies affects 30-day IPO returns, but the effects varies with strategy types.

Overall, this section attempts to provide a summary of existing studies on various determinants and consequences of strategic information disclosure. Studies based on three main theories (information asymmetry, agency theory, and proprietary costs theory) examine various factors influencing strategic information disclosure, including capital market related factors, investor-management disagreement factors, corporate

governance related factors, and product market competition factors. Managers have different incentives to disclose or withhold strategic information to multiple audiences; therefore, they need to balance the costs and benefits of such disclosure in order to make optimal disclosure decisions. With respect to the economic consequences of strategic information disclosure, studies generally focus on the stock market, including stock prices, analyst forecasts, stock liquidity, cost of capital, IPO discount, and IPO returns. These studies mainly conclude that strategic information disclosure is value enhancing. A summary of these studies can be found in Table 2.4.

2.7 Approaches to Measuring Strategic Information Disclosure

Existing studies generally examine strategic information disclosure in two dimensions: the quantity and the quality of strategic information disclosed by firms. Researchers extract and analyse strategic information from various sources, such as annual reports, presentations, press releases, websites, meetings, IPO prospectuses, announcements, integrated reports, videos, and conference calls. This section discusses different approaches employed in existing studies to measuring strategic information disclosure provided through various channels.

2.7.1 Quantity

Self-constructed disclosure index

The self-constructed disclosure index is a common method used in disclosure literature to quantify the level of corporate information disclosure. A disclosure index involves the researcher determining whether a company disclose an item on the list (Barako et al., 2006).

Based on international trends, "standard" reporting practices by multinational corporations, and previous research on accounting and reporting, Gray et al. (1995) is the first empirical study to establish a disclosure checklist to measure the quantity of strategic information presented in US and UK firms' annual reports. The disclosure

checklist for strategic information includes 34 items in five subgroups (general corporate characteristics, corporate strategy, acquisition and disposals, research and development, and future prospects). They manually compare and code the content of annual reports against the checklist to calculate the disclosure score for each sampled company. Meek et al. (1995) compare the checklist items of Gray et al. (1995) to the respective national disclosure requirements faced by US, UK, and continental European companies in the sample, resulting in a 23-item checklist for strategic information. The reason for doing this is that disclosure requirements by stock exchanges and public and private standard setters are different for companies in different countries; for example, some items are voluntary for US and UK companies but may not the case for continental European companies (Gray et al., 1995; Meek et al., 1995).

Meek et al. (1995) has been frequently cited in studies that quantify the level of strategic information disclosed in annual reports; these studies based on the disclosure lists of Meek et al. (1995) but adjust some items for different market regulatory environments (e.g., Chau and Gray, 2002; Chau and Gray, 2010; Eng and Mak, 2003; Ferguson et al., 2002; Gul and Leung, 2004; Hamrouni et al., 2017; Lim et al., 2007; Qu et al., 2013; Wang et al., 2008). Numerous studies create their own disclosure checklists and disclosure indices based on the backgrounds of different company laws, accounting standards, or any other relevant regulatory requirements (e.g., Barako et al., 2006; Depoers, 2000; Haji and Ghazali, 2012; Hassan and Lahyani, 2019; Louie et al., 2019; Morris and Tronnes, 2018; Sieber et al., 2014; Uyar and Kılıç, 2012; Xiao and Yuan, 2007; Zaini et al., 2020). In addition, some studies create self-constructed criteria to measure strategic information disclosure (e.g., Santema et al., 2005; Santema and Van de Rijt, 2001). Their criteria are slightly different from the self-constructed disclosure index. For example, each of the criteria is scored on a five-point scale specifying what the firm should release relative information on that item to be rewarded entirely, partially, or not at all. Such a coding scheme provides a more accurate measure of

disclosure quantity than a binary variable measure for each item on the disclosure checklist.

Table 2. 4 Determinants and consequences of strategic information disclosure

Panel A: Determinants and of strategic information disclosure			
Determinant	Study name	Jurisdiction	Impact
Capital market related factors	Gray et al. (1995; Journal of International Financial Management and Accounting)	US UK	The international listing factor is important in explanation of strategic information disclosures. Market pressures encourage companies to provide additional strategic information disclosures.
	Meek et al. (1995; Journal of International Business Studies)	US UK Continental European	International listing status is important in explanation of voluntary strategic disclosure.
	Ferguson et al. (2002; Journal of International Financial Management and Accounting)	HK	International capital market pressures give incentives to companies (former wholly state-owned PRC firms listed on the SEHK) to disclosure more strategic information.
	Bhojraj et al. (2004; Accounting Review)	US	Electric utilities are encouraged to release information about their future strategies to capital market participants in a deregulated environment, by doing this, these companies can ensure their operational and financial capability.
	Wang et al. (2008; Journal of International Accounting, Auditing and Taxation)	China	The level of strategic information disclosure is positively associated with the state ownership and foreign ownership.
	Lu et al. (2012; Financial Management)	US	Companies tend to provide strategic plan information after an earnings decline.
	Morris et al. (2018; Accounting Research Journal)	Asia Europe	Multi-country listing leads to an increase in strategic information disclosure.
	Thakor (2015; Journal of Financial Intermediation)	/	Firms with higher intrinsic value and lower levels of investor-management disagreement tend to provide less strategic information.

Investor-management disagreement	Agapova et al. (2019; Journal of Banking and Finance)	US	Firms with higher levels of investor-management disagreement and information asymmetry provide more strategic information.
Corporate governance factors	Meek et al. (1995; Journal of International Business Studies)	US UK Continental European	National difference effects are important factors in explaining strategic information disclosure.
	Chau et al. (2002; International Journal of Accounting)	Hong Kong Singapore	Concentrated ownership reduces the level of strategic information disclosure, such influence is particularly pronounced for family-controlled companies.
	Gul et al. (2004; Journal of Accounting and Public Policy)	HK	CEO-dominated firms tend to provide a lower level of disclosures for information on corporate strategies.
	Santema et al. (2005; European Business Review)	Europe	National differences in corporate governance and culture affect the level of corporate strategic information disclosure.
	Lim et al. (2007; European Accounting Review)	Australia	Companies with more independent boards disclose more strategic information. In addition, board composition also has a positive association with strategic information.
	Chau et al. (2010; Journal of International Accounting, Auditing and Taxation)	HK	The extent of strategic information disclosure is positively related to board independence. They also find a non-monotonic association between strategic information disclosure and family ownership.
	Sánchez et al. (2011; Accounting, Auditing & Accountability Journal)	Spain	Upper-level management plays a vital role in the decision to release strategic information on their web sites.
	Menicucc (2018; Journal of Applied Accounting Research)	/	Companies with high profitability tend to disclose less strategy related information.

Corporate governance factors	Morris et al. (2018; Accounting Research Journal)	Asia Europe	The level of voluntary strategy disclosure is higher in stakeholder-oriented countries, in countries with higher levels of financial transparency. Companies with greater firm-level disclosure propensity, or with a Big 4 auditor, tend to disclose more strategic information.
	Louie et al. (2019; Accounting Research Journal)	Australia	Family firms provide more future and strategic information than non-family firms.
	Hassan et al. (2019; Corporate Governance: The International Journal of Business in Society)	UAE	Negative media tone associated with less strategic information disclosure. Independent non-executive directors negatively affect strategic information disclosure and have a negative moderating impact on the negative media tone-strategic information disclosure relationship.
	Thakor (2015; Journal of Financial Intermediation)	/	Firms with improved corporate governance have less strategic information disclosure.
	Agapova et al. (2019; Journal of Banking and Finance)	US	Firms with good corporate governance quality disclose less strategic information.
Product market competition factors	Bhojraj et al. (2004; Accounting Review)	US	Product market competition reduces the level of strategic information disclosure, but only after regulatory issues have been resolved.
	Lu et al. (2012; Financial Management)	US	Companies in the growth stage of their life cycle provide a lower level of strategic plan disclosure, however, turnaround companies tend to provide strategic plan disclosure. The potential reason is that proprietary disclosure costs are higher for growth companies than turnaround companies, because these firms tend to develop unique products, technologies, business processes, and strategies.
	Burks et al. (2018; Review of Accounting Studies)	US	Firms provide more press releases when competition increase, at the same time, the disclosure tone becomes more negative.

Panel B: Consequences of strategic information disclosure

Consequence	Study name	Jurisdiction	Impact

Stock price	Higgins et al. (1989b; Long Range Planning)	/	Corporate communication of strategic capabilities may be one way to boost both credibility and share price.
	Higgins et al. (1992; Long Range Planning)	US	Firms that fail to adequately inform key stakeholders of their strategic intentions and direction may contribute to an ineffective or failed partnership. Strategic credibility may have a positive, quantifiable impact on share price. Further research is needed.
	Gu et al. (2007; Journal of Accounting Research)	US	There is positive share price respond to the strategy related disclosure. In addition, predisclosure insider purchase improves the disclosure credibility. Credibility enhancing effect of insider purchase is stronger for companies with higher degrees of information asymmetries.
	Whittington et al. (2016; Strategic Management Journal)	US	Strategy presentations positively affect stock prices
	Mavis et al. (2019; European Management Review)	Bayer	Stock markets react positively to strategic integrity.
Investors and analysts' reactions	Higgins et al. (1985; *Journal of Business Strategy)*	US	A company's long-term corporate strategy affects the evaluation of its stock by stock analysts when the strategy is communicated through corporate advertising, executive presentations, annual reports, and similar means.
	Bagnoli et al. (2005a; Annals of Finance)	US	Corporate Information Events (CIE), which focuses on strategic information, triggers fewer analyst revision activities in a shorter period of time than CIEs that focus on financial information because financial information is more accessible and easier to incorporate into valuation models.
	Bagnoli et al. (2005b; Annals of Finance)	US	Analysts and investors respond with a slower speed to strategic information than financial information
	Baginski et al. (2017; European Accounting Review)	Italy	Strategic plan disclosure leads to a positive stock price respond and an increase in the accuracy of analysts' earnings forecasts.

	Hamrouni et al. (2017; Review of Accounting and Finance)	France	The number of analysts increases with a high level of strategic information disclosure.
	Bozanic et al. (2018; Journal of Accounting and Economics)	US	Strategy related disclosure generates significant investor and analyst responses. Strategy related disclosure is issued more frequently when uncertainty is higher.
	Athanasakou et al. (2019; Working paper)	UK	Strategy focused disclosure reduces investor uncertainty. Strategy related commentary increases the speed at which information is incorporated into share price following the publication of the annual report.
Stock liquidity	Grüning (2011, European Accounting Review)	France Germany UK	There is a negative association between strategic information disclosure and the bid-ask spread. The probability of information-based trading decreases in line with increasing of disclosure.
	Lu et al. (2012; Financial Management)	US	Strategic plan disclosure associated with an increase in market depths and a decrease in bid-ask spreads.
	Barth et al. (2017; Accounting, Organizations and Society)	South Africa	Firms with a higher quality of reporting on strategic focus and future orientation have a smaller bid-ask spreads and, thus, higher liquidity. In addition, the quality of such reporting positively associated with firm value.
Cost of capital	Gietzmann et al. (2005; Journal of Business Finance and Accounting)	UK	There is a significant negative association between timely disclosure and the cost of capital. Companies disclose more benefit from lower costs of capital.
	Siebe et al. (2014; Business Research)	German	There is a negative association between disclosure and cost of equity capital.
	Athanasako et al. (2020; European Accounting Review)	UK	Strategy related disclosure in annual reports is negatively correlated with the cost of equity capital
IPO	Chahine et al. (2008; Journal of Small Business Management)	France	There is a curvilinear (an inverted U-shape) association between strategic information disclosure and the IPO discount.

	Gao et al. (2008; Journal of Business Communication)	US	The firm's strategy signal is not strong enough to influence the 1st-day initial returns. Consistent discussion of a prospector strategy negatively affects 30-day IPO returns. Consistent discussion of a defender strategy positively affects 30-day IPO returns.
Others	Uyar et al. (2012; Journal of Intellectual Capital)	Turkey	Strategic information disclosure is value-relevant. Such disclosure has a positive impact on firm value.

The above studies mainly investigate the quantity of corporate strategic information disclosed in annual reports. A self-constructed disclosure index has also been applied to measure strategic information from other platforms. Bhojraj et al. (2004) identify three items from annual reports and 10-K filings: plans to build customer loyalty and protect existing customer bases, strategies to exploit new opportunities, and strategies related to potential future diversification beyond traditional operations. These are used to construct a disclosure index of strategic information for 81 US electric utilities. Sánchez et al. (2011) investigate strategic information released on companies' websites in Spain. They construct a disclosure index of eight specific items related to corporate strategies, and use binary variables to quantify them. Menicucci (2018) examines forward-looking information within integrated reporting, creating a checklist of various information items using the guiding principle "strategic focus and future orientation." A disclosure index is constructed by coding each item in the disclosure checklist, based on its presence or absence. Sukhari and De Villiers (2019) also examine strategic information from integrated reports measured by a self-constructed disclosure index.

Manual content analysis

Kohut and Segars (1992) argue that an analysis of presidents' letters in annual reports may provide a clarification of presidents' current strategies. They code presidents' letters for 50 US companies on a sentence-by-sentence basis. These sentences are classified according to different themes. Finally, they measure the information by frequency distribution. A similar approach is adopted by Gu and Li (2007). They read press releases by sample firms to determine their relevance for corporate innovation strategy, and classify them into different categories. In a study of 488 US firms, Lu and Tucker (2012) examine strategic plan disclosure in earnings announcement press releases and the presentation portions of earnings conference calls. They code each transcript as containing or not containing strategic plan related information. Strategic plan disclosure is then measured by an indicator variable for a firm providing such information. Similarly, Baginski et al. (2017) measure the quantity of strategic

information contained in presentations in a simple count of qualitative strategy narrative disclosures for Italian listed firms.

Computer assisted content analysis

Recently, empirical research has shifted towards computer assisted content analysis to quantify strategic information disclosure. Employing the Descending Hierarchical Classification technique via ALCESTE software, Chahine and Filatotchev (2008) generate various groups that are related to information about the different strategic and operational aspects of an IPO company. They then use the total number of axes generated by applying lexical analysis to the company's activity section in the listing prospectus to construct an equally weighted information index. Grüning (2011) introduces a computerized content analysis approach for measuring disclosure using artificial intelligence (AIMD), which derives disclosure proxies from annual reports. The author creates a coding scheme in a training phase based on a sample of annual reports. AIMD then applies the coding scheme to a larger number of new texts. Finally, counting the number of times the standardized N-grams occur in each annual report, Grüning (2011) suggests that the AIMD method has a high level of reliability, as it does not require human intervention and judgment.

A further computer assisted method is word count analysis. Based on the self-constructed word list, Bozanic et al. (2018) employ the Perl programming language to analyse 8-K filings of the US firms on a sentence-by-sentence basis; they derive the sentence count to measure the level of information disclosed by companies. Burks et al. (2018) conduct keyword searches on press releases and code each document as 1 if it includes at least one relevant keyword in a given group and 0 otherwise. Agapova and Volkov (2019) also construct their own strategic word list to analyse S&P 1500 companies' transcripts as containing or not containing strategic information. A similar approach is also adopted to investigate strategy focused disclosures in annual reports by UK firms (Athanasakou et al., 2020; Athanasakou et al., 2019). Self-constructed

strategy focused word lists allow these studies to investigate the level of strategic information disclosure based on large samples.

To summarise, these studies show that self-constructed disclosure indices, manual content analysis, and computer-assisted content analysis constitute three major approaches to measuring the quantity of strategic information disclosure. Self-constructed disclosure indices and manual content analysis allow researchers to analyse information documents on a sentence-by-sentence basis. However, they have each developed their own voluntary disclosure standards, making results difficult to replicate (Healy and Palepu, 2001). Based on this group of studies, it can be observed that recent research has shifted towards computer assisted content analysis. One of the possible reasons is that computer assisted content analysis provides researchers with the opportunity to examine larger samples. In addition, computer assisted content analysis has relatively high reliability, because it does not require human intervention and judgment (Grüning, 2011).

2.7.2 Quality

A number of studies attempt to define the quality of strategic information disclosure. In early research, strategic information quality is defined as strategic credibility, which refers to how others, such as substantial stakeholders, consider a company's overall corporate strategy and its strategic planning capability (Diffenbach and Higgins, 1987; Higgins and Bannister, 1992; Higgins and Diffenbach, 1989b). Later, Gu and Li (2007) provide a similar but more detailed concept of the quality of strategic information disclosure. In their study, the credibility of strategic information disclosure is defined as the degree to which the disclosure is believable to investors; they use the stock price reaction to the disclosure to measure this. Recently, Mavis et al. (2019) introduce the term "strategic integrity" to describe the notion of alignment between a company's strategy communication and its following strategic actions. The level of corporate strategic integrity can be used to assess a firm's strategic information disclosure quality.

Compared with financial information, the quality of strategic information is more difficult to measure and verify due to its qualitative and subjective nature (Gu and Li, 2007). This section discusses measures of strategic information quality employed by prior papers.

Manual content analysis

Barth et al. (2017) examine the quality of strategic focus and future-orientation components of integrated report. Their measure uses the EY Excellence in Integrated Reporting awards to generate an annual percentile rank of report quality, ranging between 0 and 1 each year. Sieber et al. (2014) adopt a similar approach to measure the quality of overall disclosure. In their study, the quality of strategic information disclosure is excluded from the overall disclosure. However, they still provide evidence that the quality of strategic information disclosure can be measured based on the database of the German competition "Best Annual Report".

Another study employing manual content analysis is Gao et al. (2008). They propose three indices that can be used to assess the quality of the strategy signal: clarity, intensity, and consistency. Specifically, clarity requires firms to clearly communicate their strategic information; intensity refers to the frequency with which they communicate their strategies; and consistency deals with whether firms reliably communicate corporate strategies in the same ways across different dimensions. They measure content quality by constructing an index to code IPO prospectuses of sample firms. This method generates proxies for information clarity, intensity, and consistency, allowing to investigate the quality of the strategy signal.

In a recent study, Mavis et al. (2019) define strategic integrity as the extent to which a company's strategic actions are aligned with its prior strategy discussions. In order to evaluate corporate strategic integrity, they code all the written strategy documents

released by Bayer, and classify them according to different themes. They then compare the strategic actions with the codes describing Bayer's strategy discussions prior to the events concerned.

Disclosure ratio

Addressing the issue of the quality of strategic information disclosure, Gietzmann and Ireland (2005) develop an innovative measure of timely disclosure that attempts to capture strategic information disclosure quality for UK listed firms. They indicate that once corporate strategic events are released on the RNS, other newswire services and journalists are free to decide which announcements to release. The existence of these "other" news stories reflects the "newsworthiness" of the main announcements on the RNS. Therefore, the authors measure the disclosure quality by constructing the ratio of the number of "other" stories to RNS announcements for each company. This ratio captures the "newsworthiness" of the disclosures rather than the frequency of disclosure.

Questionnaires

In an early paper, Higgins and Diffenbach (1985) survey security analysts to investigate how important they consider long-term corporate strategies to be when evaluating company stocks, and what could be done to enhance the quality of strategic information available to them. Their results indicate that disclosure of strategic plans in meetings with top management should be more candid, and discussion of strategic plans in annual reports should be more comprehensive and meaningful. In a more recent paper, Marston (2008) sends questionnaires to companies' managers to analyse the relative importance of provision of different types of information on future prospects at meetings. Their results show that short-term strategy, long-term strategy, and main new products and developments are the most vital topics regarding future prospects.

Event studies

Event studies are very common within voluntary disclosure literature (Healy and Palepu, 2001). I identify five studies treating strategic information disclosures as events liable to generate cumulative or absolute abnormal returns in the financial market, and investigating how stock prices respond to such activities (Baginski et al., 2017; Bagnoli et al., 2005b; Gu and Li, 2007; Mavis et al., 2019; Whittington et al., 2016). To summarise, these studies show that the quality of strategic information is difficult to measure and verify due to its qualitative and subjective nature (Gu and Li, 2007). Therefore, only a few studies investigate the quality of strategic information provided by companies. More reliable methods to capture the quality of strategic information need to be developed.

Overall, this section has attempted to provide a summary of the approaches to measuring strategic information disclosure employed in the existing literature. Research in this area measures the quantity and the quality of strategic information provided by firms. Table 2.5 provides a summary of measures of strategic information disclosure employed in these empirical papers.

2.8 How to Communicate Strategy

Research on strategic information disclosure mainly focuses on the influencing factors and the effects of strategic information disclosure. However, some studies examine how managers communicate corporate strategies from three different aspects, including disclosure tone, bodily movements, and use of PowerPoint documents. For example, Burks et al. (2018) employ Loughran and McDonald (2011) dictionary of negative and positive words to analyse changes in disclosure tone of US banks. Their results show that product market competition leads to an increase in disclosure. However, the disclosure tone becomes more negative as entry barriers decrease, implying that companies have incentives to deter entry via negative information.

Based on an investigation of Apple Inc.'s keynote speeches, Wenzel and Koch (2018) investigate how do managers communicate strategy. They find that presentation activities cannot simply be scripted, but need managers to engage in bodily practice and thus more efficiently communicate corporate strategies. In addition to bodily movement, PowerPoint is also important for strategy communication. Kaplan (2011) conduct a genre analysis of PowerPoint and indicate that strategy making is not only about evaluation of industry trend, competitive positioning, or corporate resources, but it is also about how the generating and applying PowerPoint documents that shape the information.

2.9 Summary

This chapter provides a comprehensive review of studies on strategic information disclosure. I discuss research focus on four themes: (i) the concepts of strategic information (ii) the underlying factors (the main incentives) that drive companies to disclose strategic information; (iii) the economic consequences of corporate strategic information disclosure; and (iv) approaches to measuring the quantity and quality of strategic information disclosure. I find that there are differences between the concepts of strategic information disclosure adopted in studies. Different criteria are employed to examine strategic information disclosed through various channels, e.g., annual reports, conference calls, and managers' presentations. Besides, this chapter demonstrates that strategic information disclosure can be explained using information asymmetry, agency theory, and proprietary costs theory. Based on the three main theories, studies propose conflicting incentives (capital market related incentive, investor-management disagreement incentive, partner related incentive, labor market monitoring incentive, and product market competition incentive) that affect managers to make different strategic information disclosure decisions to multiple audiences (potential investor, existing investors, board of directors, information intermediaries, partners, and competitions). Studies also show that strategic information disclosure generates various consequences on the stock market.

Table 2. 5 Summary of measures of strategic information disclosure employed in empirical papers

Panel A: Quantity

Measure	Authors	year	Journal	Jurisdiction	Sample
A self-constructed disclosure index	Meek et al.	1995	Journal of International Business Studies	US, UK, Continental European	116 US, 64 UK, and 46 Continental European firms in 1989
	Gray et al.	1995	Journal of International Financial Management and Accounting	US, UK	116 US and 64 UK firms in 1989
	Depoers	2000	European Accounting Review	France	102 annual reports of French listed companies in 1995
	Santema et al.	2001	European Management Journal	Netherlands	75 Netherlands firms in 1997
	Chau et al.	2002	International Journal of Accounting	Hong Kong, Singapore	62 HK and Singapore firms in 1997
	Ferguson et al.	2002	Journal of International Financial Management and Accounting	Hong Kong	145 companies listed on the SEHK from 1995 to 1996
	Eng et al.	2003	Journal of Accounting and Public Policy	Singapore	158 firms listed on the SES from 1991 to 1995
	Bhojraj et al.	2004	Accounting Review	US	81 electric utilities list on US from 1996 to 1997
	Gul et al.	2004	Journal of Accounting and Public Policy	Hong Kong	385 HK listed firms for 1996
	Santema et al.	2005	European Business Review	Europe	100 Europe firms for 2002
	Barako et al.	2006	Corporate Governance: an international review	Kenyan	54 firms listed on the NSE from 1992 to 2001
	Lim et al.	2007	European Accounting Review	Australia	181 Australian companies for 2001
	Xiao et al.	2007	Managerial Auditing Journal	China	559 firm observations in 2002
	Wang et al.	2008	Journal of International Accounting, Auditing and Taxation	China	110 Chinese listed firms for 2005
	Chau et al.	2010	Journal of International Accounting, Auditing and Taxation	Hong Kong	273 listed firms in HK for 2002
	Sánchez et al.	2011	Accounting, Auditing & Accountability Journal	Spain	117 listed firms in Spain for 2005

	Haji et al.	2012	International Journal of Disclosure and Governance	Malaysia	85 firms for the years 2006 and 2009
	Uyar et al.	2012	Journal of Intellectual Capital	Turkey	129 manufacturing firms listed in the ISE for 2010
A self-constructed disclosure index (continued)	Qu et al.	2013	Managerial Auditing Journal	China	297chinese listed firms from 1995 to 2006
	Siebe et al.	2014	Business Research	German	100 German listed firms over 2002-2008
	Hamrouni et al.	2017	Review of Accounting and Finance	France	155 French listed firms from 2004 to 2012.
	Menicucc	2018	Journal of Applied Accounting Research	IR from businesses worldwide	282 integrated reports from 2011 to 2015
	Morris et al.	2018	Accounting Research Journal	Asia, Europe	204 firms from 12 Asian and European countries in 2005
	Hassan et al.	2019	Corporate Governance: The International Journal of Business in Society	UAE	52 UAE non-financial listed companies over 2009-2016
	Louie et al.	2019	Accounting Research Journal	Australia	60 family firms and 60 non-family firms in Australia are randomly chosen over 2001-2006
	Sukhari et al.	2019	Australian Accounting Review	South Africa	Top 100 JSE listed companies for 2014
	Zaini et al.	2020	Accounting Forum	Malaysia	30 listed firms 2009 to 2013
Manual content analysis	Kohut et al.	1992	Journal of Business Communication	US	Presidents' letters of the top 25 and the bottom 25 firms of the Fortune 500 in the 1989
	Gu et al.	2007	Journal of Accounting Research	US	180 US firms from 1992 to 1994
	Lu et al.	2012	Financial Management	US	488 US firms for 2005
	Baginski et al.	2017	European Accounting Review	Italy	264 strategic plan presentations by Milan Stock Exchange companies from 2001 to 2012
Computer assisted content analysis	Chahine et al.	2008	Journal of Small Business Management	France	140 book-built French IPOs over 1996-2000
	Grüning	2011	European Accounting Review	France, Germany, UK	All CAC 40 firms in France, all the DAX-30 firms in Germany and around 30 of the FTSE 100 in the UK for 2002
	Bozanic et al.	2018	Journal of Accounting and Economics	US	59,327 quarterly earnings announcements from 2004 to 2014

	Burks et al.	2018	Review of Accounting Studies	US	222 banks from 1994 to 2000
	Agapova et al.	2019	Journal of Banking and Finance	US	Non-financial firms included in the S&P 1500 index for the period of 2002-2012
	Athanasakou et al.	2019	Working paper	UK	9127 observations from 2002 to 2014
	Athanasako et al.	2020	European Accounting Review	UK	5152 observations for the years 2003-2014

Panel B: Quality

Measure	**Authors**	**Year**	**Journal**	**Jurisdiction**	**Sample**
Manual content analysis	Barth et al.	2017	Accounting, Organizations and Society	South Africa	79 firms listed on the JSE from 2011 to 2014
	Gao et al.	2008	Journal of Business Communication	US	57 biotechnology companies listed on the NASDAQ over 1997-2002
	Mavis et al.	2019	European Management Review	Bayer	All (234) written strategy documents published by Bayer in the eight years from 1999 to 2006
Disclosure ratio	Gietzmann et al.	2005	Journal of Business Finance and Accounting	UK	92 UK listed firms from 1993 to 2002
Questionnaire	Higgins et al.	1985	Journal of Business Strategy	US	Questionnaires of security analysts in US
	Marston	2008	Accounting and Business Research	UK	500 UK firms in the FT Top 500 for 2001
Event study	Bagnoli et al.	2005b	Annals of Finance	US	23,126 earnings clusters, 4,489 guidance clusters, 3,436 strategic clusters and 15,173 unmatched clusters or the analysis that follows between December 1997 and February 2003
	Gu et al.	2007	Journal of Accounting Research	US	180 US firms from 1992 to 1994
	Whittington et al.	2016	Strategic Management Journal	US	876 presentations on company strategy by CEOs from January 2000 to December 2010
	Baginski et al.	2017	European Accounting Review	Italy	264 strategic plan presentations by Milan Stock Exchange companies from 2001 to 2012
	Mavis et al.	2019	European Management Review	Bayer	All (234) written strategy documents published by Bayer in the eight years over 1999-2006

CHAPTER 3 OWNERSHIP STRUCTURE, PRODUCT MARKET COMPETITION, AND STRATEGIC INFORMATION DISCLSOURE

3.1 Introduction

Communication of corporate strategies seems to be increasingly common for large global companies (Whittington and Yakis-Douglas, 2012). Strategic information disclosure generally refers to information provided by companies about their specific initiatives, future actions and plans, strategic focus, and future prospects. Studies indicate that strategic information disclosure can to some extent alleviate information asymmetry and a company's cost of capital (Lu and Tucker, 2012; Thakor, 2015). Companies with strong confidence and ambition are also encouraged to release strategy-related information to gain the support of shareholders and analysts (Whittington and Yakis-Douglas, 2012). Research also suggests that strategic information disclosure may enhance corporate reputation (Whittington and Yakis-Douglas, 2012). However, preparing the appropriate information and efficiently presenting it to outsiders generate direct costs (Armitage and Marston, 2008). Chen et al. (2014) suggest that voluntary disclosure of proprietary or sensitive information is associated with low overall benefits and increased potential costs. Releasing additional strategic information to product markets has potential proprietary costs due to the existence of competitors, and thus can harm the competitive position of a company (Cotter et al., 2011). In addition, strategic information disclosure may cause disagreement between investors and managers, therefore increasing the probability of funding denial (Agapova and Volkov, 2019; Thakor, 2015). Consequently, companies have both incentives and disincentives to disclose strategic information to the public. Based on the above arguments, finding the optimal level of strategic information disclosure requires companies to consider the trade-off between the benefits and costs of releasing information. This suggests that to ensure effective operation, it is important for managers to make appropriate decisions about disclosure activities.

Motivated by this strand of research, this study investigates how companies make strategic information disclosure decisions, and the factors that influence these decisions. Previous disclosure studies mainly focus on agency theory and proprietary cost theory.

According to agency theory, managers tend to take action to maximize their own interests due to the separation between ownership and management control in firms. Therefore, in order to ensure that managers are obliged to make optimal decisions and maximize profits, internal corporate mechanisms are applied to discipline managers. Studies show that ownership structure as an internal corporate governance mechanism significantly influences corporate strategic information disclosure decisions. Specifically, higher managerial or blockholder ownership is associated with fewer agency problems, thus leading to less demand for additional strategic information (Agapova and Volkov, 2019; Chau and Gray, 2002; Htay, 2012).

Studies based on proprietary cost theory document that product market competition is an important factor affecting managers' disclosure decisions (Cotter et al., 2011; Li, 2010). Proprietary costs theory considers the costs of disclosure rather than benefits. These costs arise when private information is disclosed: such information may be exploited by competitors, thus threatening a company's competitive position (Depoers and Jeanjean, 2010; Healy and Palepu, 2001; Verrecchia, 1983, 2001). In general, proprietary costs theory suggests that product market competition pressure provides incentives to managers to withhold sensitive information. However, empirical research on strategic information generates mixed results. For example, Bhojraj et al. (2004) show that product market competition reduces the level of strategic information disclosure for 124 electric utilities in the US, but only after regulatory issues are resolved. Based on S&P 500 companies, Lu and Tucker (2012) show that companies in the growth stage of their life cycle provide a lower level of strategic plan disclosure; however, turnaround companies tend to provide strategic plan disclosure. The potential reason is that proprietary disclosure costs are higher for growth companies than turnaround companies, because growth companies tend to develop unique technologies, products, business processes, and strategies. However, studying 222 banks in the US, Burks et al. (2018) show that banks disclose more information when competition increases; at the same time, the disclosure tone becomes more negative.

In contributing to these debates, this study provides additional evidence of how ownership structure and product market competition influence corporate strategic

information disclosure, by adopting a new measurement of strategic information disclosure. I apply a textual analysis to identify strategic information. Unlike a number of studies that use disclosure indices to perform a manual content analysis of strategic information disclosure (see e.g., Sánchez et al., 2011), this study employs the strategic indicator words list developed by Agapova and Volkov (2019) to extract strategic information disclosed in corporate releases. Their list allows this study to examine a large volume of textual data through software and techniques. However, compared with Agapova and Volkov (2019), this study develops a new coding scheme to assign strategic information disclosure scores to each company. The new measurement[5] of strategic information disclosure allows this study to more comprehensively investigate the level of strategic information disclosed by a company based on yearly data.

Furthermore, an unanswered question in the literature is whether ownership structure and product market competition interact to influence corporate strategic information disclosure decisions. Previous studies theorize that competition pressure may reduce (or induce) managerial slackness, hence resulting in the need to provide managers with lower (or higher) levels of internal monitoring (Hart, 1983; Scharfstein, 1988; Schmidt, 1997). Based on the theoretical predictions, product market competition may substitute for or complement corporate governance mechanisms to improve the efficiency of management decision making. Over the years, an increasing number of studies have examined this interaction effect between product market competition and corporate governance on various aspects such as stock prices, firm performance, and the profitability of corporate R&D investment (e.g., Giroud and Mueller, 2011; Liao and Lin, 2017). Some of these studies see ownership structure as one of the most important corporate governance mechanisms; however, its influence on management decision making or firms' outcomes may become insignificant when competition increases. This is because competition substitutes for ownership structure to discipline managers (Köke et al. 2005). Alternatively, the impact of ownership structure on management decision making or firms' outcomes may be significant when competition increases; in this situation, ownership structure and competition reinforce each other (complement) to influence management decision making or firms' outcomes (Grosfeld and Tressel,

[5] The details of the measurement can be found in Section 3.3.2.1.

2002). Birt et al. (2006) introduce a new economic variable that unifies both ownership and competition in their model, and find that ownership interact with competition to significantly affect firm's voluntary segment disclosure. However, to date, there is little research investigate the interaction effect between product market competition and corporate governance on corporate disclosure decisions, let alone the strategic information disclosure. Therefore, this research fills this gap by exploring the interaction effect between ownership structure and product market competition on strategic information disclosure.

Based on a sample of US non-financial firms included in the S&P 500 index during the period from 2009 to 2018, this study first investigates the impacts of ownership structure and product market competition on strategic information disclosure, separately. I find a significantly negative association between strategic information disclosure and blockholder ownership. My results suggest that companies with higher levels of blockholder ownership have lower levels of information asymmetry, and thus have less incentive to provide strategic information. However, my results suggest that the negative relationship between managerial ownership and strategic information disclosure is sensitive to different models. In addition, I find that product market competition is negatively and significantly correlated with strategic information disclosure, implying that firms tend to provide less strategic information when they face higher competition. This result provides empirical evidence to support the proprietary cost theory.

Next, I investigate the interaction effect between ownership structure and product market competition on strategic information disclosure. The results vary with different types of ownership. Specifically, I find that managerial ownership negatively and significantly affects strategic information disclosure in non-competitive industries only. Therefore, product market competition can be viewed as a substitute for managerial ownership to influence managers' disclosure decisions. However, the results for the interaction effect between blockholder ownership and competition on strategic information disclosure show a mixed relationship. This implies that the interaction between blockholder ownership and product market competition combines both

substitutionary and complementary impacts on managers' strategic information disclosure decisions. Specifically, the effect of blockholder ownership on strategic information disclosure decreases as product market competition increases; however, when competition reaches a certain level, the effect of blockholder ownership on strategic information disclosure becomes significant again. This finding is consistent with Schmidt's (1997) theoretical model that the effect of product market competition on management's monetary incentives is both substitutionary and complementary. The above findings are robust across a series of checks, including inclusion of additional controls, alternative measures of product market competition, sub-sample analysis, and endogeneity between competition and strategic information disclosure.

In order to complement the main analysis in this study and deeply investigate companies' strategic information disclosure behaviour, I conduct several additional analyses on strategic information disclosure. First, I investigate the tone of strategic information disclosure. I apply Loughran and McDonald's (2011) dictionary of negative and positive words to analyse strategic information extracted from all transcripts of my sample firms. Specifically, I investigate the association between product market competition and the tone changes of strategic information disclosure. My findings suggest that there is a decrease in the positive tone of strategic information disclosure when firms face fierce competition in the market. The results imply that companies attempt to prevent competitors from entering the market through the negative change in disclosure tone. In addition, I also test the interaction between ownership control and product market competition on strategic information disclosure tone. My results show that managers owning more shares are associated with a reduction in positive disclosure tone when companies face fierce product market competition; however, companies with a higher level of managerial ownership tend to disclose strategic information in a relatively positive tone when product market competition is at a lower level, thereby benefitting from capital market. However, the interaction between blockholder control and product market competition has no direct influence on strategic information disclosure tone. Second, I analyse the impacts of ownership and product market competition on various categories of strategic information disclosure. I find that ownership structure and product market competition both have negative impacts on various categories of strategic information. These results

remain consistent with my previous analysis. Specifically, blockholder ownership has a greater impact on corporate strategic information disclosure decisions than managerial ownership; companies with more blockholders tend to release less strategic information to the public; and firms tend to provide a lower level of strategic information disclosure when they face higher product market competition. Finally, I extend this study to investigate the interaction between strategic information disclosure and product market competition on firms' access to finance, profitability, and firm value. I also test the interaction between strategic information disclosure and ownership control on firms' access to finance, profitability, and firm value. My results show that compared with firms with strategic information disclosure in competitive industries, corporate strategic information disclosure leads to relatively easier access to finance, greater firm performance and higher firm value when companies operate in non-competitive industries. I also find that increase in strategic information disclosure leads to harder access to finance when blockholder control is greater in the company. The underlying reason may be investor-management disagreement. In addition, blockholder ownership and strategic information disclosure interact with each other to negatively affect firms' profitability.

This study provides the following contributions to the existing literature. First, this study provides new evidence to the disclosure literature on the role of ownership structure (managerial and blockholder ownership) and product market competition. Previous studies exploring the impacts of ownership structure and product market competition mainly focus on the overall level of voluntary disclosure, financial disclosure, and other types of disclosure (e.g., Li, 2010; Huang et al., 2017; Samaha et al., 2012). However, empirical evidence relating to strategic information disclosure is limited. This study enriches the literature on the determinants of strategic information disclosure by using a new measurement of strategic information disclosure. This study employs the strategic word list of Agapova and Volkov (2019) but a new coding scheme to assign strategic information disclosure scores to each company. This new coding scheme allows us to more comprehensively investigate the level and diversity of strategic information disclosed by a company based on yearly data. Second, this study contributes to literature by providing new evidence of the interaction effect between ownership structure and product market competition on strategic information disclosure.

There is prior research investigating the interaction effect between corporate governance and product market competition on various aspects such as stock prices, firm performance, and the profitability of corporate R&D investment (e.g., Giroud and Mueller, 2011; Liao and Lin, 2017). However, there is no study examining such interaction effects on strategic information disclosure. This paper fills this gap by exploring the interaction effect between ownership structure and product market competition on strategic information disclosure. Third, this study contributes to the literature by investigating the tone changes of strategic information under different levels of product market competition and ownership control. Previous studies pay little attention to the tone of strategic information disclosure. Finally, this study contributes to the literature by analysing how strategic information disclosure influences firm profitability, firm value, and access to finance. This study adds insights to the disclosure literature on the economic consequences of strategic information disclosure.

The remainder of this chapter proceeds as follows. Section 3.2 reviews the related literature and develops the hypotheses to be tested. Section 3.3 contains a description of my sample, variables, and research models. Section 3.4 provides a discussion of the main empirical results. Section 3.5 includes the summary of this chapter.

3.2 Related Literature on Ownership Structure and Product Market Competition and Hypotheses Development

3.2.1 Ownership Structure and Strategic Information Disclosure

Agency theory considers information asymmetry caused by the separation between a firm's ownership and control (Jensen and Meckling, 1976). In disclosure literature, information asymmetry refers to different parties having different accesses to a company's private information (Brown and Hillegeist, 2007). Information asymmetry can lead to lower liquidity, higher transaction costs, and mispricing of the company's shares (Birt et al., 2006). Such agency problems can be alleviated by applying appropriate corporate governance mechanisms, hence diminishing agency costs (Haniffa and Hudaib, 2006). Disclosure studies show that different ownership structures are associated with different levels of agency problems. Managers have incentives to convince shareholders that they are acting optimally through information disclosure,

thus improving their company's transparency and reducing agency costs (von Alberti-Alhtaybat et al., 2012). Consequently, the ownership structure[6] can be considered as a significant factor in predicting and explaining management behaviour (García-Meca and Sánchez-Ballesta, 2010; Xiao and Yuan, 2007).

3.2.1.1 Managerial Ownership

Based on agency theory, higher managerial shareholdings tend to reduce the need for monitoring and controlling the actions of the agent by the principal; thus, they also reduce agency cost (Jensen and Meckling, 1976; Morck et al., 1988). In the same way, studies demonstrate that managerial ownership supports the interests of the management and shareholders; therefore, the need for monitoring by shareholders is lower in companies with higher managerial ownership. This situation raises disincentives for a company's manager to disclose more information (Eng and Mak, 2003; Kelton and Yang, 2008). In contrast, when management ownership is at a lower level, there is a greater agency problem; therefore, the need for shareholders' monitoring and controlling increases. In other words, decreasing managerial ownership results in increasing agency problems inherent in the company. Accordingly, companies with lower managerial ownership may have incentives to release more private information. Empirical evidence relating to the impact of managerial ownership on strategic information disclosure is limited. Agapova and Volkov (2019) show that in US market, lower executive director ownership is correlated with increased strategic information disclosure.

Based on the literature, lower managerial ownership is associated with greater agency problems; thus the need for additional information disclosure is increased. Therefore, it is expected that strategic information disclosure decreases with increases in managerial ownership. The first hypothesis is stated below:

H1: There is a negative association between the level of managerial ownership and the

[6] This study examines managerial ownership and blockholder ownership, respectively. In this study, blockholder ownership is defined as the percentage held by key shareholders who hold 5% or more of the firm's ordinary shares. I manually checked my ownership data and show that blockholder ownership mainly includes institutional/outside blockholder; only a few managers hold 5 or more of the company's ordinary shares. Therefore, this study does not need to consider the overlap problem for managerial and blockholder ownership.

level of strategic information disclosure

3.2.1.2 Blockholder Ownership

Fama and Jensen (1983) suggest that dispersion in ownership increases agency problems. Therefore, managers are encouraged to provide additional information to alleviate the resulting agency costs. Thus, the existence of blockholders tends to decrease corporate disclosure quantity by reducing agency problems. Samaha et al. (2012) also indicate that ownership dispersion leads to increasing in monitoring by investors; thus, firms with diffused ownership structure are likely to release more information to satisfy investors' needs. In addition, studies suggest that substantial shareholders have access to companies' private meetings which allow them to gain additional information. Therefore, substantial shareholders may have less incentive to prompt companies to improve their information disclosure (Li et al., 2012; Mitchell, 2006; Samaha et al., 2012; Schadewitz and Blevins, 1998). García-Meca and Sánchez-Ballesta (2010) conduct a meta-analysis of a sample of 27 empirical studies; they conclude that ownership concentration is negatively correlated with voluntary disclosure.

Several studies investigate strategic information disclosure and provide mixed results. Examining a sample of Hong Kong and Singapore listed firms, Chau and Gray (2002) support the agency theory based hypothesis that there is a negative relationship between concentrated ownership and the level of strategic information disclosure. Sánchez et al. (2011) explore the impact of corporate governance on strategic information via the internet in Spanish market. They find a negative but insignificant influence of blockholder ownership on strategic information disclosure. Htay (2012) provides evidence that in Malaysian market, lower blockholder ownership is correlated with increased strategic information disclosure.

Based on the above discussion, blockholder ownership structure is correlated with fewer agency problems; hence, firms may have less incentive to provide additional strategic information. Accordingly, a blockholder ownership structure is expected to reduce the likelihood of strategic information disclosure. The second hypothesis is

stated below:

H2: There is a negative association between blockholder ownership and the level of strategic information disclosure.

3.2.2 Product Market Competition and Strategic Information Disclosure

Chen et al. (2014) indicate that voluntary disclosure of proprietary or sensitive information is associated with low overall benefits and increased potential costs. Proprietary costs are viewed as one of the most significant disincentives for managers to voluntarily provide information (Healy and Palepu 2001). Unlike other theories, proprietary costs theory considers the costs of disclosure rather than the benefits. These costs arise when private information is disclosed; such information may be exploited by competitors, thus threatening a company's competitive position (Depoers and Jeanjean, 2010; Healy and Palepu, 2001; Verrecchia, 1983, 2001). Verrecchia (1983) conducts a model of the relationship between proprietary costs and information disclosure, which provides evidence that private information is not released when proprietary costs exist. Darrough and Stoughton (1990) suggest that disclosure-related costs rise as competition increases; thus, the disclosure of proprietary information is discouraged. Healy and Palepu (2001) conclude that managers have disincentives to release private information that may harm companies' competitive positions, even if the low level of disclosure makes them more difficult and costly to raise capital. Therefore, proprietary costs theory suggests that product market competition can explain companies' disclosure practices (Depoers and Jeanjean, 2010; Healy and Palepu, 2001).

Empirical studies that investigate the association between product market competition and voluntary disclosure in US market support the above theoretical findings. They show that competition from existing competitors reduces corporate voluntary disclosure quantity through increased proprietary costs (Li, 2010; Huang et al., 2017). In the context of strategic information disclosure, the assessment of proprietary costs is likely to be more sensitive due to the confidential nature of strategic information (Cotter et al., 2011). Based on a sample of S&P 500 companies, Lu and Tucker (2012) show that companies in the growth stage of their life cycle provide a lower level of strategic

plan disclosure; however, turnaround companies tend to disclose more strategic plan related information. The potential reason is that proprietary disclosure costs are higher for growth companies than turnaround companies, because companies in the growth stage of their life cycle tend to develop unique products, technologies, business processes, and strategies. Studying 222 banks in US, Burks et al. (2018) find that they provide more press releases when competition increases; at the same time, the disclosure tone becomes more negative, implying that firms are encouraged to release information through negative tone to deter potential entrants.

Based on proprietary costs theory, the disclosure of strategic information is costly because it provides sensitive information to current and potential competitors in the product market. Hence, it is expected that companies have less incentive to provide additional strategic information when they face higher product market competition. The third hypothesis is stated below:

H3: Product market competition reduces the level of corporate strategic information disclosure.

3.2.3 The Interaction Between Ownership Structure and Product Market Competition

Agency theory emphasizes numerous incentive mechanisms to explain the behaviour of managers and the impact of their behaviour on firms and the broader economy. According to agency theory, a company is controlled by its managers rather than its owners, and therefore is not designed to maximize profits. In other words, agency theory suggests a problem of inefficiency inherent in the company. Such inefficiency takes the form of managerial slack (Hart, 1983). In addition to corporate governance mechanisms, studies generally suggest that product market competition is one of the best ways to discipline managers (Aghion et al., 1999; Nalebuff and Stiglitz, 1983). Hart (1983) conducts a model of the relationship between competition and slackness; he indicates that product market competition can reduce managerial slack. Specifically, managers must work hard and make optimal decisions in order to fulfil their profit targets; otherwise, they will go out of business. Based on the above arguments, corporate governance mechanisms are not needed because the competitive selection

process in the markets will ensure that managers are obliged to make optimal decisions and maximize profits. In other words, product market competition substitutes corporate governance mechanisms to monitor managers to make optimal decisions and maximise firms' profits. However, Scharfstein (1988) shows that competition reduces managerial slack, but this could be easily reversed depending upon the manager's utility function and reduced profits. Schmidt (1997) constructs a model which investigates the interaction between product market competition and management incentives. The author shows that when product market competition becomes fierce, management is forced to work hard due to competitive pressures. At this time, market competition will substitute for management incentives and encourage managers to work hard for the interests of shareholders. However, when market competition exceeds a certain range, the decline in profits from increased competition may reduce the value of production costs and the benefits of hard work; hence, the need for internal monitoring by corporate governance mechanisms increases. Combining these two situations, the impact of product market competition on management incentives is mixed (both substitutionary and complementary).

Based on agency theory, due to the separation between ownership and management control in firms, managers may act in their own interests rather than maximizing profit. Therefore, internal corporate mechanisms are applied to discipline them to ensure that they make optimal decisions and maximize profits. Furthermore, product market competition pressure may reduce managerial slack, hence substituting for or complementing corporate governance mechanisms to improve the efficiency of management decision making (Hart, 1983). Several studies examine the interaction between product market competition and corporate governance. More specifically, researchers try to answer the question of whether corporate governance and product market competition reinforce/complement each other, or whether competition can be viewed as a substitute for corporate governance. If they are complementary, the influence of product market competition will be stronger in companies with effective corporate governance mechanisms. If they are substitutes, the impact of corporate governance on managerial decisions will be important only in non-competitive industries.

A number of papers empirically investigate the interaction between governance mechanisms and product market competition. Cremers et al. (2008) analyse the interaction between takeover defences and product market competition in US market. They find that companies facing higher product market competition have more takeover defences, indicating that product market competition can be considered as a substitute for the market for corporate control, and product market competition makes the monitoring less costly. Accordingly, shareholders are likely to allow more takeover defences when a firm faces a higher level of product market competition. Later, based on a sample of 3,241 US companies, Giroud and Mueller (2011) investigate whether companies facing lower product market competition benefit more from good governance than companies facing higher product market competition. Their results show that weak-governance firms have lower equity returns only in non-competitive industries. The reason is that weak governance leads to an increase in agency costs if there is no competitive pressure in the product market. More recently, Liao and Lin (2017) explore the interaction effect between corporate governance and product market competition on the R&D investments profitability for US listed companies. Their results show that good-governance companies in less competitive industries obtain more favourable R&D announcement returns than companies with good-governance in competitive industries, supporting the theoretical argument that corporate governance and product market competition are substitutes.

Some studies consider shareholder control and ownership structure as corporate governance variables. Nickell et al. (1997) investigate the roles of three factors in improving firms' productivity performance: corporate governance, debt levels, and product market competition. Their results show that shareholder control and financial pressure can substitute for product market competition, implying that product market competition has less influence on productivity performance when firms face financial pressure or have dominant external shareholders. Conversely, Januszewski et al. (2002) indicate that in German manufacturing industry, companies experience higher productivity growth when operating in a highly competitive market. Similarly, companies controlled by dominant owners have higher productivity growth. Furthermore, product market competition and dominant owners' control complement each other; specifically, the positive influence of product market competition is

reinforced by the presence of dominant owners. In a study comparing UK and German markets, Köke et al. (2005) suggest that the positive influence of bank debt concentration complements the positive impact of competition on productivity growth in both poorly performing and profitable companies. In UK companies, blockholders do not significantly influence productivity growth when firms face fierce competition; however, the existence of blockholders enhances firms' productivity growth in less competitive industries. In other words, product market competition and blockholder control act as substitutes.

In sum, theoretical and empirical studies generate mixed results on the interaction effects between product market competition and corporate governance. Specifically, product market competition may substitute for or complement corporate governance to discipline managers to ensure that they make optimal decisions. Based on my previous discussion (Sections 3.2.1 and 3.2.2), ownership control (managerial and blockholder ownership) is associated with fewer agency problems; product market competition is associated with higher proprietary costs. Based on proprietary costs theory, the disclosure of strategic information is costly because it provides sensitive information to current and potential competitors in the product market. Therefore, it is expected that companies have less incentive to provide additional strategic information when they face higher product market competition. Hence, these factors may give incentives to managers to provide less strategic information disclosure. Furthermore, product market competition may impose discipline on managers and reduce managerial slack, resulting in fewer agency problems. Consequently, product market competition may interact with ownership structure to mitigate corporate agency problems (because either could mitigate agency costs), and therefore, lead to less inventive for managers to provide additional strategic information. The above arguments lead to the following hypotheses:

H4: Managerial ownership and product market competition interact with each other to reduce strategic information disclosure.

H5: Blockholder ownership and product market competition interact with each other to reduce strategic information disclosure.

3.3 Sample Selection and Research Design

3.3.1 Sample and Data

The sample used in this research is based on the data of non-financial firms included in the S&P 500 index during the period from 2009 to 2018.[7] Based on the availability of strategic information data for this study, my initial sample contains 3,750 firm-year observations. The data for firms' strategic information disclosure is obtained from the Fair Disclosure Wire database accessed through Lexis Nexis. I manually collect the transcripts of all press releases, conference calls, and conference presentations (excluding briefs) for all non-financial companies included in the S&P 500 index from the Fair Disclosure Wire database. Furthermore, this study employs text analysis methodology to extract firms' strategic information disclosure from their transcripts based on the strategic indicator words list of Agapova and Volkov (2019). The data on ownership structure is derived from the Securities and Exchange Commission (SEC) website. The data used to calculate product market competition and all control variables are obtained from CRSP/Compustat and Datastream. The definitions of all variables used in this study, and the data sources from which they are obtained are attached in Appendix 3. The final sample consists of 2,761 firm-year observations after losing all missing variables included in the ownership variables, and control variables.

3.3.2 Key Variables

3.3.2.1 Strategic Information Disclosure

In order to determine the quantity of corporate strategic information disclosure, a textual analysis is applied to identify strategic information from companies' transcripts.[8] This study follows Agapova and Volkov (2019), using their strategic indicator words list to extract the strategic information disclosed in the releases of companies. Their

[7] Due to the turbulent market conditions during 2008 to 2009 arising from the global financial crisis, my sample begins in 2009 to ensure a period with relatively stable institutions and policies. My sample ends in 2018, i.e., the last year with available data for the entire year. Besides, due to the time-consuming issue of manual collection, I limit my sample to 10 years.

[8] I manually collect the transcripts of all press releases, conference calls, and conference presentations (excluding briefs) for all non-financial companies included in the S&P 500 index over 2009-2018 from the Fair Disclosure Wire database accessed through Lexis Nexis.

strategic indicator words list includes words and word patterns indicating the possible existence of strategic information disclosure. Unlike a number of studies that employ self-constructed disclosure index/criteria or other manual content analysis approaches to measure the quantity of information disclosure (see e.g., Eng and Mak, 2003; Gray et al., 1995; Gu and Li, 2007; Lu and Tucker, 2012; and Sánchez et al., 2011; Sieber et al., 2014), this study applies computer-assisted content analysis to examine the textual data. Self-constructed disclosure indices and manual content analysis approaches allow researchers to analyse information documents on a sentence-by-sentence basis. However, authors have developed their own voluntary disclosure standards, making results difficult to replicate (Healy and Palepu, 2001). Comparatively, computer-assisted content analysis method provides researchers with the opportunity to examine large samples. In addition, the computer-assisted content analysis method has relatively high reliability, because it does not require human intervention and judgment (Grüning, 2011).

Based on the strategic indicator words list of Agapova and Volkov (2019), the sentences of companies' transcripts containing strategic information are classified into seven categories: mergers and acquisitions, research and development, consolidation, divestitures, cost control, move (offices, facilities), and growth (expansion). This study then develops a new coding scheme[9] to assign strategic information disclosure scores to each company. Specifically, it assigns a score of 0 if the company makes no strategic information disclosure in any category of releases in a given year, 1 if the firm provides strategic information belonging to one category, 2 if the firm provides strategic

[9] Agapova and Volkov (2019) measure strategic information disclosure as a binary variable that equals 1 if the company provides strategic information in a given quarter, and 0 otherwise. This study employs the same strategic word list but a new coding scheme. The underlying reason for doing this is that this study is based on yearly data rather than quarterly data. Quarterly data allow Agapova and Volkov (2019) to measure strategic information by a binary variable. However, in yearly data, over half of companies disclose strategic information. For example, if a company disclose strategic information in only one quarter of a year, then Agapova and Volkov (2019) consider the variable of strategic information as 1 for this quarter, and 0 for the other 3 quarters. However, this study considers the variable of strategic information as containing strategic information for the entire year even the company only discloses such information in one quarter. Therefore, I classify strategic information into seven categories and assign strategic information disclosure scores to each disclosure category. The variable of the strategic information disclosure score for a company in a given year is measured as the aggregate score obtained from each category in a given year divided by the maximum potential score (7) applicable to that company. This new coding scheme allows us to more comprehensively investigate the level of strategic information disclosed by a company based on yearly data. Besides, comparing with quarterly data, yearly data allows me to examine the diversity of strategic information disclosure.

information in two categories, and so on. As a result, the strategic information disclosure score for a company in a given year (SID7) is measured as the aggregate score obtained from each category in a given year divided by the maximum potential score (7) applicable to that company. The total score for each company ranges from 0 to 1.

Table 3.1 shows the distribution of strategic information disclosure.[10] Panel A in Table 3.1 presents the distribution of the number of companies disclosing strategic information each year and in each industry. All industries are based on 1-digit SIC codes.[11] It can be observed that, in 2009, 297 firms in all industries (excluding the financial industry) choose to release their strategic information to the public. The number of disclosing firms then increases year by year to 351 in 2015. It is possible that companies benefit from strategic information disclosure, for example by reducing information asymmetry and cost of capital. However, the number of disclosing firms decreases after 2015. This may be due to the proprietary costs or other costs of strategic information disclosure. In addition, the results in Panel A also show that more firms in SIC-3 manufacturing (plastics-electronics) related industry choose to disclose strategic information; fewer firms in SIC-8 services (health-private household) related industry provide strategic information. There are two potential reasons for these results: firstly, firms in manufacturing (plastics-electronics) related industry are associated with more unique technologies and engaged in more R&D activities; secondly, the total number of firms in SIC-3 manufacturing (plastics-electronics) related industry (fraction is 28.19%) is greater than the total number of firms in SIC-8 services (health-private household) related industry (fraction is 0.16%). Next, I report the distribution of the number of firms that disclose various types of strategic information each year in Panel B, Table 3.1. Following Agapova and Volkov (2019), I classify strategic information into seven main types: growth (Growth, e.g., expansion), mergers and acquisitions (M&A), research and development (R&D), consolidation (Consolidate), cost control

[10] Table 3.1 based on the sample of 3,750 firm-year observations (the availability of strategic information data for this study).

[11] SIC-1 is mining and construction related industry. SIC-2 is manufacturing (food-petroleum) related industry. SIC-3 is manufacturing (plastics-electronics) related industry. SIC-4 is transportation related industry. SIC-5 is wholesale trade and retail trade related industry. SIC-6 is finance related industry (excluded from the sample of this study). SIC-7 is services (hotel-recreation) related industry. SIC-8 is services (health-private household) related industry.

(Cost), divestitures (Divest), and move (Move, e.g., relocation of offices and facilities). As shown in Panel B, Table 3.1, there are four types of strategic information that more companies tend to disclose: Growth, MA, R&D, and Consolidate. Comparatively, fewer companies provide strategic information related to Cost, Divest and Move. The underlying reason may be the high disclosure costs of these types of strategic information, alternatively, companies may be engaged in fewer activities of these types.

Table 3. 1 Strategic information disclosure distribution

Panel A: Number of firms that disclosed strategic information each year and in each industry

Industry	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
SIC-1	27	25	27	29	29	31	27	26	24	22	240
SIC-2	62	67	62	69	68	77	74	76	69	66	561
SIC-3	88	95	101	97	102	99	97	95	94	92	771
SIC-4	44	50	47	50	49	47	53	49	48	41	384
SIC-5	35	39	42	44	46	46	49	45	41	41	347
SIC-7	37	42	43	39	39	43	45	48	47	49	352
SIC-8	4	4	6	5	5	5	6	5	8	7	51
Total	297	322	328	333	338	348	351	344	331	318	3,310

Panel B: Number of firms that disclosed various types of strategic information each year

Category	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Growth	193	233	239	239	249	261	262	244	237	234	2391
M&A	171	195	211	206	199	222	230	225	188	186	2033
R&D	181	184	179	192	213	222	217	224	217	203	2032
Consolidate	163	153	135	166	178	186	191	197	148	151	1668
Cost	76	76	62	61	59	61	78	63	57	45	638
Divest	45	41	42	42	47	63	52	39	49	46	466
Move	11	15	14	15	15	11	12	16	8	12	129
Total	840	897	882	921	960	1026	1042	1008	904	877	9357

Note: This table presents the distribution of strategic information disclosure. Panel A in Table 3.1 shows the distribution of the number of firms disclosing strategic information each year and in each industry. All industries are based on 1-digit SIC codes. SIC-1 is mining and construction related industry. SIC-2 is manufacturing (food-petroleum) related industry. SIC-3 is manufacturing (plastics-electronics) related industry. SIC-4 is transportation related industry. SIC-5 is wholesale trade and retail trade related industry. SIC-6 is finance related industry (excluded from the sample of this study). SIC-7 is services (hotel-recreation) related industry. SIC-8 is services (health-private household) related industry. Panel B in Table 3.1 reports the distribution of the number of firms that disclose various types of strategic information each year. Following Agapova and Volkov (2019), I classify strategic information into seven main types: growth (Growth, e.g., expansion), mergers and acquisitions (M&A), research and development (R&D), consolidation (Consolidate), cost control (Cost), divestitures (Divest), and move (Move, e.g., relocation of offices and facilities). Each firm may disclose more than one type of strategic information each year, therefore the total number in Panel B is greater than total number in Panel A.

3.3.2.2 Product Market Competition

Studies largely employ industry concentration to measure product market competition (e.g., Giroud and Mueller, 2011; Huang et al., 2017; Liao and Lin, 2017). The Herfindahl-Hirschman index (HHI) is a powerful and common indicator for analysing the degree of concentration; thus, this study employs it to proxy product market competition. This index ranges from 0 to 1. Higher values suggest higher concentration in the industry, which means relatively less competition in the market, and vice versa. The HHI is calculated as the sum of squared market shares of all companies in each industry:

$$HHI_i = \sum_{j=1}^{J} S_{ijt}^2 \qquad \text{(eq.3.1)}$$

where S_{ijt} is the market share of firm i in industry j in year t. For each year, market share is measured by a firm's sales divided by total sales in its industry. To compute the HHI, I use all available Compustat companies, excluding companies where sales are missing or negative. The calculation of the HHI is based on two-digit SIC industry. According to Li (2010), another widely used measure for industry concentration is the four-firm concentration ratio. Therefore, in my robustness analysis, I employ the four-firm concentration ratio to measure product market competition.

3.3.2.3 Ownership Structure

Managerial ownership (MOWN) is measured as the proportion of ordinary shares held by the CEO and executive directors (Eng and Mak, 2003; Turki and Sedrine, 2012). There is no unambiguous definition of a blockholder; existing studies generally define a blockholder as a shareholder who holds 5% or more of a company's ordinary shares (e.g., Eng and Mak, 2003; Konijn et al., 2011; Mitton, 2002; Xiao and Yuan, 2007;). Therefore, in this study, blockholder ownership (BLOCK) is defined as the proportion held by substantial shareholders who hold 5% or more of the company's ordinary shares.

3.3.2.4 Control Variables

This study controls for firm-specific and corporate governance factors. Specifically, I control for firm profitability (ROA), which is calculated by return on assets. ROA is a

common proxy for firm profitability. I control for leverage ratio; leverage (Lev) is considered as an important factor associated with the level of corporate voluntary information disclosure. Lev is defined by the debt to total assets ratio. I control for firm liquidity (Liquidity), which measured by the current ratio of the firm, and calculated by total current assets over total current liabilities. Following Gul and Leung (2004), I measure the variable of firm growth opportunities (MTB) by the market to book ratio. I control for firm size (Size), which is calculated as the natural logarithm of a firm's total assets. I control for EBITDA/Sales (E/S), calculated as earnings before interest, taxes, depreciation, and amortization, divided by total sales. According to Agapova and Volkov (2019), companies facing higher levels of financial constraint have incentives to release more strategic information in order to mitigate information asymmetry and the cost of capital. Therefore, I control for financial constraint (Fin Cons). Following Baños-Caballero et al. (2014), companies with a dividend payout ratio (calculated as dividends/net profit) above the sample median are less financially constrained. Firms followed by more analysts are encouraged to disclose a higher level of information disclosure (Agapova and Volkov, 2019). Therefore, I control for the number of analysts following a company in a year (Analyst). I also control for two corporate governance factors: BoardSize and Meetings. BoardSize is the number of directors on the board of a company in a year. This is associated with a firm's control mechanism; thus, it affects corporate disclosure decisions (Sánchez et al., 2011). The Meetings variable is the number of board meetings for a company in a year. Sánchez et al. (2011) suggest that board activity, generally through board meetings, provides communication between the firm's directors and managers about the firm's operations and future plans. Consequently, the frequency of board meetings is expected to influence corporate strategic information disclosure decisions. Finally, this study employs year fixed effects and industry fixed effects in the main analysis, robustness analysis, and addition analysis. Industry fixed effects are based on the two-digit SIC industry code. The definitions of all variables used in this paper are provided in Appendix 3.

3.3.3 Empirical Models

To analyse the influence of ownership structure on strategic information disclosure, this study employs the following panel regressions:

$$SID7_{it} = \alpha + \beta_1 MOWN_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 Liquidity_{it} + \beta_5 MTB_{it} + \beta_6 Size_{it} + \beta_7 E/S_{it} + \beta_8 Fin\ \ Cons_{it} + \beta_9 Analyst_{it} + \beta_{10} BoardSize_{it} + \beta_{11} Meetings_{it} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{it};$$ (eq.3.2)

$$SID7_{it} = \alpha + \beta_1 BLOCK_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 Liquidity_{it} + \beta_5 MTB_{it} + \beta_6 Size_{it} + \beta_7 E/S_{it} + \beta_8 Fin\ \ Cons_{it} + \beta_9 Analyst_{it} + \beta_{10} BoardSize_{it} + \beta_{11} Meetings_{it} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{it};$$ (eq.3.3)

To explore the effect of product market competition on strategic information disclosure, this study employs the following panel regressions:

$$SID7_{it} = \alpha + \beta_1 HHI_{jt} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 Liquidity_{it} + \beta_5 MTB_{it} + \beta_6 Size_{it} + \beta_7 E/S_{it} + \beta_8 Fin\ \ Cons_{it} + \beta_9 Analyst_{it} + \beta_{10} BoardSize_{it} + \beta_{11} Meetings_{it} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{it};$$ (eq.3.4)

$$SID7_{it} = \alpha + \beta_1 HHI_{jt} + \beta_2 MOWN_{it} + + \beta_3 BLOCK_{it} + \beta_4 ROA_{it} + \beta_5 Lev_{it} + \beta_6 Liquidity_{it} + \beta_7 MTB_{it} + \beta_8 Size_{it} + \beta_9 E/S_{it} + \beta_{10} Fin\ \ Cons_{it} + \beta_{11} Analyst_{it} + \beta_{12} BoardSize_{it} + \beta_{13} Meetings_{it} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{it},$$ (eq.3.5)

where $SID7_{it}$ is the strategic information disclosure score for a firm i at year t. $MOWN_{it}$ measures the managerial ownership structure of a firm i at year t. $BLOCK_{it}$ measures blockholder ownership structure of a firm i at year t. HHI_{jt} is the Herfindahl-Hirschman index (HHI), the proxy for product market competition. This index ranges from 0 to 1. Higher values suggest higher concentration in the industry, which means relatively less competition in the market, and vice versa. ROA_{it} measures the profitability (return on assets) of a firm i at year t. Lev_{it} measures the leverage ratio (debt to total assets ratio) of a firm i at year t. $Liquidity_{it}$ measures the liquidity (total current assets over total current liabilities) of a firm i at year t. MTB_{it} measures the growth opportunities (the market to book ratio) of a firm i at year t. $Size_{it}$ measures the size of a firm i at year t (natural logarithm of a firm's total assets). E/S_{it} measures the operation profitability of a firm i at year t, and is calculated as earnings before interest, taxes, depreciation, and amortization, divided by total sales. $Fin\ Cons_{it}$ measures the financial constraint of a firm i at year t. $Analyst_{it}$ is the number of analysts following a firm in a year. $BoardSize_{it}$ represents the number of directors on the board of a firm i at year t. $Meetings_{it}$ measures the number of board meetings for a firm i at year t. The models include year fixed effects and industry fixed effects. Industry fixed effects are based on the two-digit SIC industry code. The definitions of

all variables used in this paper are provided in Appendix 3.

To consider the potential interacting effects between ownership structure and product market competition on strategic information disclosure, based on Giroud and Mueller (2011), I construct the following panel regressions:

$$SID7_{it} = \alpha + \beta_1(MOWN_{it} * I_{jt}) + \beta_2 HHI(high)_{jt} + \beta_3 HHI(medium)_{jt} + \beta_4 ROA_{it} + \beta_5 Lev_{it} + \beta_6 Liquidity_{it} + \beta_7 MTB_{it} + \beta_8 Size_{it} + \beta_9 E/S_{it} + \beta_{10} Fin\ \ Cons_{it} + \beta_{11} Analyst_{it} + \beta_{12} BoardSize_{it} + \beta_{13} Meetings_{it} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{it}; \quad \text{(eq. 3.6)}$$

$$SID7_{it} = \alpha + \beta_1(BLOCK_{it} * I_{jt}) + \beta_2 HHI(high)_{jt} + \beta_3 HHI(medium)_{jt} + \beta_4 ROA_{it} + \beta_5 Lev_{it} + \beta_6 Liquidity_{it} + \beta_7 MTB_{it} + \beta_8 Size_{it} + \beta_9 E/S_{it} + \beta_{10} Fin\ \ Cons_{it} + \beta_{11} Analyst_{it} + \beta_{12} BoardSize_{it} + \beta_{13} Meetings_{it} + Year\ \ Dummies + Industry\ \ Dummies + \varepsilon_{it}, \quad \text{(eq. 3.7)}$$

where $SID7_{it}$ is the strategic information disclosure score for a firm i at year t. $MOWN_{it}$ measures the managerial ownership structure of a firm i at year t. $BLOCK_{it}$ measures the blockholder ownership structure of a firm i at year t. I_{jt} is a (3*1) vector of HHI dummies. The HHI dummies indicate whether the HHI of industry j at year t lies in the lowest, medium, or highest tercile of its empirical distribution. $MOWN_{it} * I_{jt}$ and $BLOCK_{it} * I_{jt}$ measure the interaction effect (complement or substitution) of ownership structure and product market competition. The models include year fixed effects and industry fixed effects. Industry fixed effects are based on the two-digit SIC industry code. The definitions of all variables used in this paper are provided in Appendix 3.

3.4 Empirical Results

3.4.1 Summary Statistics

Table 3.2 presents descriptive statistics for the strategic information disclosure, managerial ownership, blockholder ownership, product market competition and control

variables included in my main analysis. SID7 is the strategic information disclosure score, which takes a value between 0 and 1. It can be observed that there is a wide range in the amount of strategic information released by sample firms. The highest strategic information disclosure score is 1, meaning that these firms disclose all categories of strategic information; the lowest score is 0, implying that some firms do not provide any information related to their strategic plans. The mean strategic information score is 0.357, indicating that, on average, companies disclose 2.499 out of the 7 categories of strategic information analysed in this study. Comparing managerial ownership (MOWN) and blockholder ownership (BLOCK), the management shareholding level is much lower than the blockholder ownership level. The mean of MOWN is 0.036, while that of BLOCK is 0.236. This means that, on average, blockholders hold 23.6% of stock, while management only hold 3.6%.

Table 3.3 presents the Pearson and Spearman correlation coefficients between the strategic information disclosure variable, product market competition variable, and all control variables. The Pearson (Spearman) correlation coefficients are displayed below (above) the diagonal. The strategic information disclosure score (SID7) is significantly and negatively related to managerial ownership (MOWN) and blockholder ownership (BLOCK). Based on the results, corporate strategic information disclosure decreases with increased managerial ownership and blockholder ownership respectively. The results also show that, compared with blockholder ownership (–0.101, –0.077), management ownership (–0.070, –0.047) has a lower level of influence on strategic information disclosure. Regarding correlations between strategic information disclosure and product market competition (HHI), Table 3.3 shows that HHI significantly related to SID7, implying that product market competition affects corporate strategic information disclosure decisions.

3.4.2 Multivariate Analyses

3.4.2.1 The Effects of Ownership Structure and Product Market Competition on Strategic Information Disclosure

To explore the impacts of ownership structure on strategic information disclosure, I

Table 3. 2 Descriptive Statistics

Variable	Mean	Dev.	Min	Max	P25	P50	P75
SID7	0.357	0.211	0.000	1.000	0.143	0.429	0.571
MOWN	0.036	0.076	0.000	0.816	0.006	0.013	0.030
BLOCK	0.236	0.132	0.000	0.909	0.141	0.223	0.306
HHI	0.097	0.091	0.009	0.629	0.043	0.066	0.114
ROA	0.067	0.078	–1.227	0.373	0.031	0.063	0.102
Lev	0.250	0.163	0.000	2.361	0.145	0.238	0.338
Liquidity	1.835	1.201	0.168	12.916	1.100	1.502	2.198
MTB	3.039	0.651	0.262	7.999	2.695	2.970	3.288
Size	8.326	1.070	4.975	12.042	7.579	8.179	8.954
E/S	0.229	0.168	–3.433	0.740	0.138	0.215	0.312
Fin Cons	0.535	0.499	0.000	1.000	0.000	1.000	1.000
Analyst	19.296	7.431	1.000	54.667	14.083	18.500	23.750
BoardSize	10.880	2.047	4.000	29.000	10.000	11.000	12.000
Meetings	7.880	3.249	2.000	43.000	6.000	7.000	9.000

Note: This table reports the descriptive statistics for the variables used in the main analysis. The sample period is from 2009 to 2018. SID7 is strategic information disclosure score that takes the value from 0 to 1. MOWN is the aggregate percentage of common shares owned by management. BLOCK is the aggregate percentage of common shares owned by blockholders (blockholder define as a shareholder who holds 5% or more of company's ordinary shares). HHI is Herfindahl-Hirschman index that measures the competitive structure of the product market. This index ranges from 0 to 1 and calculated by sales. ROA measures profitability (return on assets) of a firm. Lev measures leverage ratio (debt to total assets ratio) of a firm. Liquidity is calculated as the current ratio of the firm, which defined as total current assets over total current liabilities. MTB measures growth opportunities (the market to book ratio) of a firm. Size is natural logarithm of a firm's total assets. E/S is corporate operation profitability, measured as the company's earnings before interests, taxes, depreciation, and amortization, divided by total sales. Fin Cons is a dummy variable of companies' financial constraint, and it takes value of "1" if the company with a dividend payout ratio (calculated as dividends/net profit) above the sample median. Analyst is the number of analysts following. BoardSize is the number of directors on the board. Meetings is the number of board meetings. All variables are defined in Appendix 3.

estimate equations 3.2 and 3.3, and present the results in Table 3.4. Columns (1), (2), (3), and (4) report results of OLS regressions investigating the effects of ownership structure on corporate strategic information disclosure decisions. The dependent variable is the strategic information disclosure score (SID7), which ranges from 0 to 1. In Column (1), the result of OLS regression with year indicators suggests that managerial ownership (MOWN) is significantly and negatively related to strategic information disclosure (–0.1381, t = –2.66), implying that a firm with a higher level of MOWN tend to disclose less strategic information. This result supports the first hypothesis (H1) of this study, specifically, higher managerial ownership is associated with fewer agency problems; thus the need for additional information disclosure is decreased (Agapova and Volkov, 2019; Eng and Mak, 2003; Kelton and Yang, 2008).

Table 3. 3 Correlation matrix

Variable	SID7	MOWN	BLOCK	HHI	ROA	Lev	Liquidity	MTB	Size	E/S	Fin Cons	Analyst	BoardSize	Meetings
SID7	1	**–0.047**	**–0.077**	–0.018	**0.028**	–0.009	**0.042**	**0.047**	**0.176**	**0.031**	**0.031**	**0.051**	**0.097**	**0.115**
MOWN	**–0.070**	1	**0.304**	**0.054**	**0.099**	**–0.109**	**0.175**	**0.096**	**–0.333**	**–0.217**	**–0.207**	**–0.042**	**–0.144**	**–0.219**
BLOCK	**–0.101**	**0.468**	1	–0.011	**–0.068**	**0.096**	**0.050**	**0.157**	**–0.302**	**–0.111**	**–0.171**	**–0.080**	**–0.171**	–0.028
HHI	**–0.055**	**0.065**	–0.028	1	**0.146**	**–0.047**	**0.057**	**–0.098**	**0.193**	**–0.368**	0.027	**0.113**	**0.076**	**–0.124**
ROA	0.006	0.025	**–0.076**	**0.106**	1	**–0.251**	**0.318**	**–0.112**	–0.010	**0.208**	**–0.035**	**0.140**	**–0.112**	**–0.218**
Lev	–0.018	0.001	**0.099**	–0.010	**–0.138**	1	**–0.311**	–0.023	**–0.099**	**0.162**	**0.170**	**–0.212**	**0.153**	**0.105**
Liquidity	0.006	0.010	**0.044**	**–0.063**	**0.236**	**–0.224**	1	**0.081**	–0.011	0.026	**–0.197**	**0.074**	**–0.226**	**–0.136**
MTB	0.020	0.016	**0.114**	**–0.081**	**–0.132**	–0.021	**0.069**	1	**–0.190**	**0.098**	**–0.046**	**0.074**	**–0.115**	**–0.062**
Size	**0.186**	**–0.032**	**–0.261**	**0.154**	**0.030**	**–0.100**	**–0.029**	**–0.150**	**1**	**–0.108**	**0.137**	**0.338**	**0.331**	**0.085**
E/S	0.022	**–0.067**	**–0.089**	**–0.175**	**0.447**	**0.094**	**0.108**	**0.062**	**–0.056**	**1**	**0.062**	**0.083**	**–0.047**	**0.072**
Fin Cons	**0.034**	**–0.056**	**–0.170**	**0.053**	**0.042**	**0.140**	**–0.143**	**–0.056**	**0.155**	**0.058**	**1**	**–0.079**	**0.251**	0.017
Analyst	**0.048**	**0.044**	**–0.059**	**0.069**	**0.059**	**–0.196**	**0.099**	**0.115**	**0.340**	**0.066**	**–0.091**	**1**	–0.0251	**–0.076**
BoardSize	**0.111**	**0.030**	**–0.135**	**0.075**	**–0.082**	**0.116**	**–0.237**	**–0.109**	**0.322**	–0.028	**0.229**	**–0.054**	**1**	**0.128**
Meetings	**0.079**	**–0.070**	–0.001	**–0.103**	**–0.182**	**0.091**	**–0.102**	**–0.054**	**0.035**	**0.034**	–0.008	**–0.060**	**0.106**	1

Note: This table presents the Pearson and Spearman correlation coefficients for the main variables. The Pearson (Spearman) correlation coefficients are displayed blow (above) the diagonal. The sample period is from 2009 to 2018. All variables are defined in Appendix 3. Significant correlation at p<0.1 are in in bold.

These results also are economically significant. For instance, the coefficient of –0.1381 on MOWN implies that a one-standard deviation increase in managerial ownership is associated with a 2.94% decrease in corporate strategic information disclosure. Therefore, strategic information disclosure decreases with increases in managerial ownership. However, as shown in Column (2), this negative effect becomes insignificant after controlling for industry fixed effect, implying that the negative relationship between MOWN and strategic information disclosure is sensitive to different models and therefore needs to be further explored. Columns (3) and (4) investigate the association between blockholder ownership (BLOCK) and strategic information disclosure. The results suggest that BLOCK has a significant and negative effect on strategic information disclosure. The coefficients on BLOCK are –0.1283 (t = –4.07) in Column (3), and –0.1128 (t = –3.58) in Column (4), and both significant at the 1% level, implying that firms are less likely to provide strategic information as BLOCK increases. These results also are economically significant. For instance, in Column (3), the coefficient of –0.1283 on BLOCK implies that a one-standard deviation increase in blockholder ownership is associated with a 4.74% decrease in corporate strategic information disclosure. The results support the agency theory-based hypothesis H2 in this study. Specifically, higher blockholder ownership is associated with fewer agency problems; thus, firms with relatively higher blockholder ownership tend to provide less strategic information. Columns (5) to (8) report results of ordered logistic regressions examining the effect of ownership structure on corporate strategic information disclosure decisions. The dependent variable is the disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. The results are consistent with OLS regression results. Specifically, the negative relationship between MOWN and strategic information disclosure is sensitive to the inclusion of industry fixed effect; BLOCK reduces the level of strategic information disclosure.

Overall, the results reported in Table 3.4 show that companies with relatively high levels of blockholder ownership tend to provide less strategic information. The potential reason for this is that a higher level of blockholder ownership is associated with fewer agency problems; thus management has less incentive to disclose strategic information. However, the negative impact of managerial ownership on strategic

information disclosure is sensitive to different models; therefore, this relationship needs to be explored further.

Table 3.5 analyse the influence of product market competition on strategic information disclosure. I estimate equations 3.4 and 3.5, and present the results in Columns (1) and (2). The dependent variable is the strategic information disclosure score (SID7), which ranges from 0 to 1. HHI is the Herfindahl-Hirschman index. The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. As shown in Columns (1) and (2), HHI is significantly and positively related to strategic information disclosure. The coefficients on HHI are 0.2496 in Column (1) and 0.2328 in Column (2), both significant at the 1% level. These results also are economically significant. For instance, in Column (1), the coefficient of 0.2496 on HHI implies that a one-standard deviation increase in HHI index is associated with a 6.36% increase in corporate strategic information disclosure. In Columns (3) and (4), I perform ordered logistic regressions to explore the association between product market competition and strategic information disclosure. The dependent variable is the disclosure score for strategic information (SID); the total score for each company ranges from 0 to 7. Columns (3) and (4) both show that there is a significant and positive association between HHI and strategic information disclosure. The coefficients of HHI are 2.4653 in Column (3) and 2.2971 in Column (4).

The significant positive association between HHI and strategic information disclosure implies that firms tend to increase the level of strategic information disclosure when industry concentration is high. In other words, firms tend to provide more strategic information when they face lower levels of product market competition. Based on proprietary costs theory, the disclosure of strategic information is costly because it provides sensitive information to current and potential competitors in the product

Table 3. 4 The effects of ownership structure on strategic information disclosure

	SID7 (Ordinary least squares regression)						SID (Ordered logistic regression)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MOWN	–0.1381***	–0.0745			–1.0523**	–0.6488		
	(–2.66)	(–1.41)			(–2.29)	(–1.23)		
BLOCK			–0.1283***	–0.1128***			–1.1398***	–1.1684***
			(–4.07)	(–3.58)			(–3.99)	(–3.59)
ROA	0.0654	–0.1590*	0.0537	–0.1682*	0.5885	–1.7344*	0.4975	–1.8491**
	(0.88)	(–1.83)	(0.72)	(–1.93)	(0.88)	(–1.95)	(0.75)	(–2.07)
Lev	–0.0258	0.0036	–0.0229	0.0079	–0.2154	–0.0006	–0.1831	0.0462
	(–1.06)	(0.15)	(–0.94)	(0.33)	(–1.03)	(–0.00)	(–0.88)	(0.20)
Liquidity	0.0050	–0.0127***	0.0059*	–0.0118***	0.0458	–0.1289***	0.0545*	–0.1184***
	(1.45)	(–3.62)	(1.72)	(–3.36)	(1.55)	(–3.71)	(1.84)	(–3.42)
MTB	0.0117*	–0.0003	0.0120*	0.0004	0.1156*	–0.0047	0.1210*	0.0029
	(1.65)	(–0.04)	(1.69)	(0.06)	(1.77)	(–0.07)	(1.85)	(0.04)
Size	0.0322***	0.0102**	0.0289***	0.0069	0.2843***	0.0867*	0.2555***	0.0514
	(7.57)	(2.20)	(6.64)	(1.45)	(7.29)	(1.86)	(6.42)	(1.07)
E/S	–0.0430	–0.0067	–0.0501	–0.0163	–0.4908*	–0.0539	–0.5690**	–0.1580
	(–1.36)	(–0.15)	(–1.58)	(–0.37)	(–1.74)	(–0.12)	(–2.01)	(–0.35)
Fin Cons	0.0020	0.0173**	–0.0013	0.0147*	–0.0003	0.1454*	–0.0306	0.1172
	(0.25)	(1.99)	(–0.16)	(1.69)	(–0.00)	(1.70)	(–0.41)	(1.36)
Analyst	–0.0007	0.0019***	–0.0008	0.0018***	–0.0057	0.0201***	–0.0068	0.0188***
	(–1.09)	(2.83)	(–1.35)	(2.61)	(–1.06)	(2.96)	(–1.27)	(2.77)
BoardSize	0.0045**	0.0077***	0.0039*	0.0075***	0.0402*	0.0716***	0.0354*	0.0700***
	(2.00)	(3.31)	(1.72)	(3.23)	(1.94)	(3.06)	(1.71)	(3.00)
Meetings	0.0046***	0.0023*	0.0049***	0.0025**	0.0400***	0.0244**	0.0430***	0.0267**
	(3.46)	(1.94)	(3.64)	(2.08)	(3.41)	(2.12)	(3.59)	(2.28)
Constant	–0.0107	0.1441**	0.0416	0.1871***				
	(–0.22)	(2.16)	(0.83)	(2.76)				
_cut1					1.0211**	–0.5569	0.5630	–1.0050*
					(2.33)	(–0.94)	(1.23)	(–1.65)
_cut2					2.1676***	0.7220	1.7124***	0.2762
					(4.96)	(1.23)	(3.76)	(0.46)

_cut3					3.2164***	1.9305***	2.7647***	1.4889**
					(7.34)	(3.29)	(6.06)	(2.47)
_cut4					4.3703***	3.2467***	3.9219***	2.8102***
					(9.89)	(5.53)	(8.53)	(4.66)
_cut5					5.7979***	4.7765***	5.3515***	4.3443***
					(12.93)	(8.05)	(11.50)	(7.14)
_cut6					7.5968***	6.6135***	7.1504***	6.1812***
					(16.13)	(10.74)	(14.70)	(9.81)
_cut7					10.6832***	9.7133***	10.2365***	9.2802***
					(13.07)	(10.73)	(12.41)	(10.13)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	2,761	2,761	2,761	2,761	2,761	2,761	2,761	2,761
Adj. R-sq	0.046	0.196	0.199	0.199				
Log likelihood					–4,778.214	–4,509.1675	–4,773.0296	–4,502.8504
Pseudo R-sq					0.015	0.070	0.016	0.072

Note: This table shows the results of the impacts of managerial ownership (MOWN) and blockholder ownership (BLOCK) on strategic information disclosure. Models (1) to (4) present results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Models (5) to (8) present results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. All regressions control for year fixed effects. Models (2), (4), (6), and (8) control for industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics or z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Table 3. 5 The effects of product market competition on strategic information disclosure

	SID7 (Ordinary least squares regression)		SID (Ordered logistic regression)	
	(1)	(2)	(3)	(4)
HHI	0.2496***	0.2328***	2.4653***	2.2971***
	(3.50)	(3.27)	(3.38)	(3.15)
MOWN		0.0231		0.3946
		(0.39)		(0.66)
Block		–0.1144***		–1.2323***
		(–3.16)		(–3.33)
ROA	–0.1618*	–0.1698*	–1.7432**	–1.8579**
	(–1.86)	(–1.95)	(–1.97)	(–2.09)
Lev	–0.0000	0.0057	–0.0347	0.0224
	(–0.00)	(0.23)	(–0.15)	(0.10)
Liquidity	–0.0119***	–0.0109***	–0.1234***	–0.1115***
	(–3.41)	(–3.11)	(–3.61)	(–3.25)
MTB	0.0003	0.0011	0.0033	0.0109
	(0.05)	(0.15)	(0.05)	(0.16)
Size	0.0096**	0.0061	0.0799*	0.0421
	(2.08)	(1.29)	(1.72)	(0.87)
E/S	–0.0018	–0.0128	0.0125	–0.1073
	(–0.04)	(–0.29)	(0.03)	(–0.24)
Fin Cons	0.0172**	0.0143	0.1398	0.1090
	(1.98)	(1.64)	(1.63)	(1.26)
Analyst	0.0017**	0.0016**	0.0181***	0.0171**
	(2.53)	(2.36)	(2.66)	(2.50)
BoardSize	0.0077***	0.0076***	0.0722***	0.0713***
	(3.31)	(3.28)	(3.09)	(3.04)
Meetings	0.0025**	0.0026**	0.0253**	0.0276**
	(2.04)	(2.16)	(2.19)	(2.36)
Constant	0.0885	0.1360*		
	(1.28)	(1.92)		
_cut1			–0.0004	–0.5112
			(–0.00)	(–0.81)
_cut2			1.2820**	0.7734
			(2.09)	(1.22)
_cut3			2.4942***	1.9899***
			(4.07)	(3.15)
_cut4			3.8121***	3.3131***
			(6.21)	(5.25)
_cut5			5.3426***	4.8486***
			(8.63)	(7.63)
_cut6			7.1800***	6.6861***
			(11.17)	(10.16)
_cut7			10.2796***	9.7849***
			(11.05)	(10.38)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	2,761	2,761	2,761	2,761
Adj. R-sq	0.198	0.201		
Log likelihood			–4,504.8222	–4,498.1223
Pseudo R-sq			0.071	0.073

Note: This table presents the results of the impacts of product market competition (HHI) on strategic information disclosure. Models (1) and (2) present results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Models (3) and (4) present results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. HHI is product market competition, measured by Herfindahl-Hirschman index. The calculation of the HHI index is based on firms' sales. The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. Model (2) and (4) include ownership variables, managerial ownership (MOWN) and blockholder ownership (BLOCK). All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics or z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

market (Cotter et al., 2011). Hence, companies have less incentive to disclose strategic information when they face higher product market competition. This result is consistent with Lu and Tucker (2012), who show that companies in the growth stage of their life cycle provide a lower level of strategic plan disclosure; however, turnaround companies tend to provide more strategic plan disclosure. The potential reason is that proprietary disclosure costs are higher for growth

companies than turnaround companies, because these firms tend to develop unique technologies, products, business processes, and strategies. Overall, the results presented in Table 3.5 support the proprietary theory-based hypothesis H3. Specifically, firms tend to provide less strategic information when they face higher competition in the product market. The potential reason for this negative relationship may be the proprietary costs of disclosing strategic information.

3.4.2.2 The Effect of the Interaction between Ownership and Product Market Competition on Strategic Information Disclosure

To analyse the influence of the interaction between ownership and product market competition on strategic information disclosure, I perform the equations 3.6 and 3.7 and report the results in Columns (1) and (2) of Table 3.6. The dependent variable is the strategic information disclosure score (SID7), which ranges from 0 to 1. Column (1) analyse the effect of the interaction between managerial ownership and product market competition on strategic information disclosure. It can be observed that the coefficient of the interaction term (MOWN*HHI) is significant and negative in the highest HHI tercile (–0.2329), and insignificant in the medium and lowest HHI terciles.[12] The results suggest that the negative influence of managerial ownership on strategic information disclosure is significant only when companies face lower product market competition. The results support the hypothesis (H4) that managerial ownership and product market competition interact with each other to reduce strategic information disclosure. Specifically, product market competition weakens the negative influence of managerial ownership on strategic information disclosure. In other words, increased competitive pressure imposes discipline on managers to reduce agency problems, thus resulting in decreased information needs. Hence, product market competition can be considered as a substitute for managerial ownership to mitigate agency problems, and thus shape the corporate strategic information disclosure policy.

Column (2) investigates the effects of the interaction between blockholder ownership and product market competition on strategic information disclosure. Column (2) shows that the coefficient of the interaction term BLOCK*HHI (high) is significant at the 1% level (–0.1786) in the highest HHI tercile. The coefficient of the interaction term BLOCK*HHI (medium) is small (–0.0662) and insignificant in the medium HHI tercile. However, the coefficient of the interaction term

[12] The Herfindahl-Hirschman index (HHI) measures the degree of industry concentration. This index ranges from 0 to 1. Higher values suggest higher concentration in the industry, which means relatively less competition in the market, and vice versa.

BLOCK*HHI (low) is large (–0.1074) and significant in the lowest HHI tercile. Based on the results of Column (2), it can be observed that there is a mixed relationship between the interaction term and strategic information disclosure. The mixed relationship implies that the interaction between blockholder ownership and product market competition combines both substitute and complementary impacts on firms' strategic information disclosure decisions. Specifically, the negative influence of blockholder ownership on strategic information disclosure decreases as product market competition increases; however, when competition reaches a certain level, the impact of blockholder ownership on strategic information disclosure becomes significant again. This finding supports Schmidt's (1997) theoretical prediction. Specifically, when product market competition becomes fierce, management is forced to work hard due to competitive pressures, and thus fewer agency problems. At this time, market competition will substitute for corporate internal monitoring and encourage managers to work hard for the interests of the shareholders. However, when market competition exceeds a certain range, the decline in profits from increased competition may reduce the benefits of hard work (manager's utility function and reduced profits); thus, the need for internal monitoring is increased. Based on Schmidt's (1997) theory, the result of Column (2) can be interpreted as follows: the negative effect of blockholder on corporate strategic information disclosure is significant when competition is lower, but the effect decreases as competition increases. At this time, product market competition can substitute for blockholders to discipline managers to reduce agency problems, thus, resulting in decreased strategic information disclosure. However, when competition exceeds a certain range, the marginal benefits of hard work for managers decrease; thus, the need for blockholder monitoring of management increases (the effect of blockholders on strategic information disclosure becomes significant again). At this time, product market competition and blockholder ownership complement each other to discipline managers to reduce agency problems, thus, leading to decreased strategic information disclosure. Combining these situations, the interaction influences of product market competition and blockholder ownership on strategic information disclosure are both substitutionary and complementary. In Columns (3) and (4), I perform ordered logistic regressions to explore the interaction between ownership structure and product market competition. The dependent variable is the disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. In Columns (3) and (4), the coefficients of interaction terms show the same trend across HHI terciles as Columns (1) and (2).

Overall, the findings of Table 3.6 support the hypotheses (H4 and H5) that ownership structure (managerial and blockholder ownership) and product market competition interact to reduce corporate strategic information disclosure. Specifically, managerial ownership significantly

reduces strategic information disclosure in non-competitive industries only; the negative influence of blockholder ownership on strategic information disclosure decreases as product market competition increases, but the effect will eventually increase again when competition becomes too intense.

3.4.3 Robustness Analyses

This section presents the results of robustness tests. First, I further examine whether my main finding of this study is sensitive to the inclusion of additional controls. Second, I employ an alternative measure of product market competition to repeat my main analysis regarding the interaction effect between ownership structure and product market competition on strategic information disclosure. Third, I conduct a sub-sample analysis to analyse the impacts of ownership structure on strategic information disclosure when companies face different levels of product market competition. Finally, I conduct an analysis to examine the endogeneity problem between product market competition and strategic information disclosure.

3.4.3.1 Additional Controls

In this section, I further analyse whether the main results of this study are sensitive to the inclusion of additional controls. First, I investigate whether a company's research and development expenditures may influence the company's strategic information disclosure decisions. According to Jansen (2010), companies engaged in innovation activities employ a variety of strategies to inform market about their abilities to develop new technologies. In some industries, companies choose to disclose information about their upcoming innovations. However, in other industries, companies work in complete secrecy, for example, some e-commerce companies develop their new products under 'stealth mode'. These companies choose to keep silent until the innovation is launched. In addition, studies find that companies are likely to provide less strategic information disclosure when proprietary disclosure costs are high (Jones, 2007; Lu and Tucker, 2012). To account for the potential effect of R&D intensity on strategic information disclosure, I control R&D intensity, measured by the ratio of R&D expenditures to total assets. The results are presented in Table 3.7 (Columns (1) to (4)) where they show that R&D intensity negatively and significantly affect strategic information disclosure, suggesting that R&D intensive companies tend to disclose less strategic information, because companies' strategic information is generally associated with high proprietary disclosure costs (Lu and Tucker, 2012). Note that the trend of the coefficients on interaction terms between ownership and product market competition (MOWN*HHI and BLOCK*HHI) remain the same as my previous findings, implying that my main results are not

Table 3. 6 The effects of the interaction between ownership and product market competition on strategic information disclosure

	SID7 (Ordinary least squares regression)		SID (Ordered logistic regression)	
	(1)	(2)	(3)	(4)
MOWN*HHI (high)	–0.2329**		–2.3840**	
	(–2.36)		(–2.14)	
MOWN*HHI (medium)	–0.0365		–0.3192	
	(–0.48)		(–0.46)	
MOWN*HHI (low)	0.1362		1.2235	
	(1.34)		(1.35)	
BLOCK*HHI (high)		–0.1786***		–1.7857***
		(–3.31)		(–3.17)
BLOCK*HHI (medium)		–0.0662		–0.7985*
		(–1.37)		(–1.65)
BLOCK*HHI (low)		–0.1074**		–1.0253*
		(–1.96)		(–1.80)
HHI (high)	0.0288*	0.0304	0.2561	0.2881
	(1.75)	(1.38)	(1.56)	(1.28)
HHI (medium)	–0.0020	–0.0159	–0.0373	–0.1224
	(–0.15)	(–0.77)	(–0.28)	(–0.59)
ROA	–0.1669*	–0.1738**	–1.8009**	–1.8719**
	(–1.93)	(–2.00)	(–2.04)	(–2.10)
Lev	0.0033	0.0082	0.0019	0.0528
	(0.14)	(0.34)	(0.01)	(0.23)
Liquidity	–0.0128***	–0.0114***	–0.1294***	–0.1155***
	(–3.66)	(–3.27)	(–3.76)	(–3.35)
MTB	–0.0001	0.0009	–0.0068	0.0075
	(–0.02)	(0.13)	(–0.10)	(0.11)
Size	0.0102**	0.0070	0.0844*	0.0542
	(2.17)	(1.47)	(1.79)	(1.11)
E/S	–0.0119	–0.0203	–0.1192	–0.1948
	(–0.27)	(–0.46)	(–0.26)	(–0.43)
Fin Cons	0.0179**	0.0150*	0.1488*	0.1185
	(2.06)	(1.72)	(1.74)	(1.37)
Analyst	0.0018***	0.0017**	0.0192***	0.0184***
	(2.70)	(2.55)	(2.81)	(2.68)
BoardSize	0.0078***	0.0075***	0.0716***	0.0701***
	(3.33)	(3.24)	(3.05)	(2.99)
Meetings	0.0024**	0.0025**	0.0247**	0.0262**
	(1.98)	(2.06)	(2.13)	(2.23)
Constant	0.1182*	0.1656**		
	(1.75)	(2.36)		
_cut1			–0.3790	–0.7999
			(–0.63)	(–1.27)
_cut2			0.9025	0.4830
			(1.51)	(0.77)
_cut3			2.1149***	1.6975***
			(3.54)	(2.71)
_cut4			3.4341***	3.0194***
			(5.74)	(4.83)
_cut5			4.9641***	4.5532***
			(8.22)	(7.22)
_cut6			6.8004***	6.3896***
			(10.85)	(9.80)
_cut7			9.9000***	9.4883***
			(10.87)	(10.24)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	2,761	2,761	2,761	2,761
Adj. R-sq	0.197	0.199		
Log likelihood			–4,504.7733	–4,500.932
Pseudo R-sq			0.071	0.072

Note: This table shows the results of the impacts of the interaction between ownership structure and product market competition on strategic information disclosure. Models (1) and (2) present results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Models (3) and (4) report the results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. Modes (1) and (3) examine the effects of the interaction between managerial ownership (MOWN) and product market competition on strategic information disclosure. Models (2) and (4) examine the effects of the interaction between blockholder ownership (BLOCK) and product market competition on strategic information disclosure. Follow Giroud and Mueller (2011), the HHI dummies indicate whether the HHI is in the highest, middle, or lowest tercile of its empirical distribution. HHI dummies represent medium and lower levels of product market competition used to control for any direct impact of product market competition on corporate strategic information disclosure. HHI (high) is a dummy variable that equals 1 if the HHI of firm i in year t lies in the highest tercile of its empirical distribution. HHI (medium) is a dummy variable that equals 1 if the HHI of firm i in year t lies in the medium tercile of its empirical distribution. HHI (low) is a dummy variable that equals 1 if the HHI of firm i in year t lies in the lowest tercile of its empirical distribution. HHI is product market competition, measured by Herfindahl-Hirschman index. The calculation of the HHI index is based on firms' sales. The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics or z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Table 3. 7 Robustness tests: The effects of the interaction between ownership and product market competition on strategic information disclosure (additional controls)

	SID7 (Ordinary least squares regression)		SID (Ordered logistic regression)	
	(1)	(2)	(3)	(4)
MOWN*HHI (high)	–0.1876**		–1.7730*	
	(–1.99)		(–1.69)	
MOWN*HHI (medium)	0.0083		0.1501	
	(0.10)		(0.20)	
MOWN*HHI (low)	0.2213		1.9652	
	(1.64)		(1.51)	
BLOCK*HHI (high)		–0.1524***		–1.4519**
		(–2.78)		(–2.51)
BLOCK*HHI (medium)		–0.0439		–0.5464
		(–0.88)		(–1.05)
BLOCK*HHI (low)		–0.1318**		–1.2615**
		(–2.26)		(–2.05)
HHI (high)	0.0383**	0.0273	0.3612**	0.2589
	(2.20)	(1.18)	(2.05)	(1.08)
HHI (medium)	0.0035	–0.0227	0.0181	–0.1904
	(0.25)	(–1.07)	(0.13)	(–0.87)
ROA	–0.2056**	–0.2077**	–2.2076**	–2.2296**
	(–2.29)	(–2.32)	(–2.38)	(–2.40)
Lev	–0.0285	–0.0230	–0.3261	–0.2637
	(–1.17)	(–0.94)	(–1.38)	(–1.11)
Liquidity	–0.0122***	–0.0110***	–0.1179***	–0.1062***
	(–3.31)	(–2.98)	(–3.25)	(–2.92)
MTB	–0.0012	–0.0001	–0.0117	0.0015
	(–0.17)	(–0.01)	(–0.16)	(0.02)
Size	0.0083*	0.0054	0.0681	0.0395
	(1.72)	(1.08)	(1.38)	(0.78)
E/S	0.0097	0.0033	0.0923	0.0300
	(0.21)	(0.07)	(0.19)	(0.06)
Fin Cons	0.0167*	0.0141	0.1292	0.1023
	(1.87)	(1.59)	(1.46)	(1.16)
Analyst	0.0018**	0.0018**	0.0187***	0.0190***
	(2.45)	(2.46)	(2.58)	(2.63)
BoardSize	0.0084***	0.0083***	0.0794***	0.0798***
	(3.48)	(3.47)	(3.19)	(3.23)
Meetings	0.0021*	0.0022*	0.0231*	0.0246**
	(1.73)	(1.82)	(1.95)	(2.05)
R&D intensity	–0.2405**	–0.2421**	–2.7517**	–2.7507**
	(–2.26)	(–2.25)	(–2.57)	(–2.52)
Beta	–0.0423***	–0.0388***	–0.3931***	–0.3554***
	(–4.00)	(–3.64)	(–3.65)	(–3.27)
Independence	0.0007***	0.0007***	0.0077***	0.0072***
	(3.11)	(2.94)	(3.21)	(2.99)
Firm age	–0.0119	–0.0123	–0.1046	–0.1065
	(–1.47)	(–1.54)	(–1.30)	(–1.33)
Constant	0.1940**	0.2440***		
	(2.44)	(3.02)		
_cut1			–1.0325	–1.4547*
			(–1.35)	(–1.87)
_cut2			0.2673	–0.1540
			(0.35)	(–0.20)
_cut3			1.5142**	1.0940
			(1.99)	(1.42)
_cut4			2.8348***	2.4166***
			(3.73)	(3.13)
_cut5			4.3748***	3.9605***
			(5.70)	(5.09)
_cut6			6.2411***	5.8279***
			(7.90)	(7.28)
_cut7			9.2946***	8.8808***
			(9.04)	(8.60)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	2,643	2,643	2,643	2,643
Adj. R-sq	0.212	0.214		
Log likelihood			–4,282.323	–4,279.2391
Pseudo R-sq			0.078	0.078

Note: This table shows the results of the impacts of the interaction between ownership structure and product market competition on strategic information disclosure. I include four additional control variables into my models, including R&D intensity, Beta, board independence (Independence), and firm age (Firm age). Models (1) and (2) present results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Models (3) and (4) present results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. Mode (1) and (3) examine the effects of the interaction between managerial ownership (MOWN) and product market competition on strategic information disclosure. Models (2) and (4) examine the effects of the interaction between blockholder ownership (BLOCK) and product market competition on strategic information disclosure. Follow Giroud and Mueller (2011), the HHI dummies indicate whether the HHI is in the highest, meddle, or lowest tercile of its empirical distribution. HHI dummies represent medium and lower levels of product market competition used to control for any direct impact of product market competition on corporate strategic information disclosure. HHI (high) is a dummy variable that equals 1 if the HHI of firm i in year t lies in the highest tercile of its empirical distribution. HHI (medium) is a dummy variable that equals 1 if the HHI of firm i in year t lies in the medium tercile of its empirical distribution. HHI (low) is a dummy variable that equals 1 if the HHI of firm i in year t lies in the lowest tercile of its empirical distribution. HHI is product market competition, measured by Herfindahl-Hirschman index. The calculation of the HHI index is based on firms' sales. The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics or z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

affected by the inclusion of the R&D intensity variable.

Second, a recent study suggests that the cost of equity is higher for companies without disclosure than companies with disclosure, therefor companies will provide more information when they anticipate raising capital (Thakor, 2015). Thakor's (2015) theory also mentioned that the cost of investor-manager disagreement in companies with higher systematic risk or higher cost of equity should be lower than the benefit of reduced information asymmetry. Following Agapova and Volkov (2019), I employ Beta to proxy the systematic risk of the company, because companies with more systematic risk have a higher cost of equity. The results in Table 3.7 indicate that the coefficients on Beta are negative and significant, which are consistent with the results of Agapova and Volkov (2019). Columns (1) and (3) show that the coefficient on MOWN*HHI is significant in the highest HHI tercile, and small and insignificant in the medium and lowest HHI tercile. Columns (2) and (4) show that the coefficients of BLOCK*HHI (high) is significant in the highest HHI tercile, and insignificant in the medium HHI tercile. However, the coefficient of BLOCK*HHI (low) become significant again in the lowest HHI tercile. The results support my main findings.

Third, empirical evidence shows that board independence is an important factor that influence companies' strategic information disclosure activities. In particular, Chau and Gray (2010) find that a firm with an independent chairman or independent non-executive directors tend to increase the level of disclosure. Lim et al. (2007) also show that firms with more independent boards provide more strategic information disclosure. In a recent research, Hassan and Lahyani (2019) find that independent non-executive directors tend to adopt a conservative approach, encouraging a lower level of strategic information disclosure when firms face negative media tone. To mitigate the concern that omitted variables may drive my results, I control for the impact of board independence (Independence) on strategic information disclosure, and present the results in Table 3.7. Columns (1) to (4) show that firms with more independent board provide more strategic information to mitigate information asymmetry. Note that the trend of the coefficients on MOWN*HHI and BLOCK*HHI remain the same as my previous findings, thus, support my main findings.

Finally, I take firm age into account. Lu and Tucker (2012) show that companies in the growth

stage of their life cycle provide a lower level of strategic plan disclosure. The potential reason is that proprietary disclosure costs are higher for growth companies, because these companies tend to develop unique technologies, products, business processes, and strategies. In Table 3.7, my results show that the association between firm age (Firm age) and strategic information disclosure is negative but insignificant, implying that firm age do not directly affect firms' strategic information disclosure policy. Notably, however, the trend of the coefficients on MOWN*HHI and BLOCK*HHI remain the same as my main findings, thus, support my main findings.

In sum, my results are robust and insensitive to the inclusion of additional controls,[13] further confirming that the interaction between ownership and product market competition plays a vital role in influencing corporate strategic information disclosure activities.

3.4.3.2 Alternative Measure of Product Market Competition

To check robustness, I examine an alternative measure of product market competition. According to Li (2010), the most widely used proxy for product market competition is industry concentration, measured by the Herfindahl-Hirschman Index or four-firm concentration ratio. Therefore, in my robustness analysis, I use the four-firm concentration ratio (FFR). Table 3.8 shows the results for the impact of the interaction between ownership structure and product market competition on strategic information disclosure. Columns (1) and (2) report results for OLS regressions. The dependent variable is strategic information disclosure score (SID7), which ranges from 0 to 1. Columns (3) and (4) present results for ordered logistic regressions. The dependent variable is the disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7.

Columns (1) and (3) investigate the impact of the interaction between managerial ownership and product market competition on strategic information disclosure. It can be observed that the same pattern exists across FFR terciles in Columns (1) and (3). The coefficients of interaction terms (MOWN*FFR) are always large and significant in the highest FFR tercile, and always small and insignificant in the medium and lowest FFR tercile. The results suggest that the impact of managerial ownership on strategic information disclosure is significant only in companies facing

[13] In untabulated tests, I also examine the four additional controls, which included respectively in my main analysis regarding the interaction effect between ownership structure and product market competition on strategic information disclosure, and the results remain consistent.

weak product market competition. Therefore, product market competition can be viewed as a substitute for managerial ownership in shaping the corporate strategic information disclosure policy. Columns (2) and (4) examine the impact of the interaction between blockholder ownership and product market competition on strategic information disclosure. The results show that the coefficient of the interaction term BLOCK*FFR (high) is significant in the highest FFR tercile. The coefficient of the interaction term BLOCK*FFR (medium) is small and insignificant in the medium FFR tercile. However, the coefficient of the interaction term BLOCK*FFR (low) becomes large and significant again in the lowest FFR tercile. Based on the results, there is a mixed relationship between the interaction term and strategic information disclosure.

Overall, the results of these tests based on an alternative measure of product market competition are consistent with previous analysis in this study. Product market competition substitute managerial ownership to influence strategic information disclosure. The interaction between blockholder ownership and product market competition combines both substitutionary and complementary impacts on managers' strategic information disclosure decisions.

3.4.3.3 Sub-sample Analysis

In Table 3.9, I perform several further tests to analyse the effects of ownership structure on strategic information disclosure when companies face different levels of product market competition. I divide full sample firms into highest, medium, and lowest product market competition sub-groups. HHI is the Herfindahl-Hirschman index (HHI). The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. Columns (1), (4), (7), and (10) report the results for the highest HHI group, implying that these firms face weak product market competition. Columns (2), (5), (8), and (11) report the results for the medium HHI group, implying that these firms face a medium level of product market competition. Columns (3), (6), (9), and (12) report the results for the lowest HHI group, implying that these firms face strong product market competition. Columns (1) to (6) present results for OLS regressions. The dependent variable is the strategic information disclosure score (SID7) that ranges from 0 to 1. From Columns (1) to (3), it can be observed that the coefficient of MOWN is only negative and significant in HHI (high) sub-group. Therefore, managerial ownership negatively and significantly influences strategic information disclosure when firms operate in weak-competition industries. The influence of managerial ownership on strategic information disclosure decreases as product market competition increases, implying that product market competition substitutes managerial controls

Table 3. 8 Robustness tests: The effects of the interaction between ownership and product market competition (four-firm concentration ratio) on strategic information disclosure

	SID7 (Ordinary least squares regression)		SID (Ordered logistic regression)	
	(1)	(2)	(3)	(4)
MOWN*FFR (high)	–0.2123**		–2.3256**	
	(–2.16)		(–2.03)	
MOWN*FFR (medium)	–0.0316		–0.1953	
	(–0.43)		(–0.30)	
MOWN*FFR (low)	0.0973		0.8672	
	(0.88)		(0.91)	
BLOCK*FFR (high)		–0.1572***		–1.6594***
		(–2.98)		(–2.97)
BLOCK*FFR (medium)		–0.0524		–0.6438
		(–1.09)		(–1.35)
BLOCK*FFR (low)		–0.1543***		–1.4374**
		(–2.72)		(–2.49)
FFR (high)	0.0174	0.0078	0.1153	0.0627
	(1.08)	(0.34)	(0.73)	(0.27)
FFR (medium)	0.0119	–0.0161	0.0767	–0.1431
	(0.72)	(–0.70)	(0.46)	(–0.60)
ROA	–0.1642*	–0.1740**	–1.7575**	–1.8448**
	(–1.90)	(–2.00)	(–1.99)	(–2.06)
Lev	0.0037	0.0069	0.0085	0.0416
	(0.15)	(0.28)	(0.04)	(0.18)
Liquidity	–0.0128***	–0.0117***	–0.1302***	–0.1183***
	(–3.63)	(–3.29)	(–3.74)	(–3.39)
MTB	–0.0002	0.0009	–0.0080	0.0085
	(–0.03)	(0.13)	(–0.12)	(0.12)
Size	0.0105**	0.0068	0.0879*	0.0523
	(2.25)	(1.42)	(1.88)	(1.07)
E/S	–0.0083	–0.0153	–0.0940	–0.1549
	(–0.19)	(–0.34)	(–0.21)	(–0.34)
Fin Cons	0.0173**	0.0140	0.1445*	0.1130
	(1.99)	(1.60)	(1.68)	(1.30)
Analyst	0.0019***	0.0018***	0.0203***	0.0195***
	(2.84)	(2.72)	(2.99)	(2.87)
BoardSize	0.0078***	0.0075***	0.0721***	0.0695***
	(3.34)	(3.22)	(3.07)	(2.97)
Meetings	0.0024**	0.0025**	0.0250**	0.0266**
	(1.97)	(2.08)	(2.15)	(2.26)
Constant	0.1253*	0.1854***		
	(1.84)	(2.62)		
_cut1			–0.4648	–0.9988
			(–0.77)	(–1.58)
_cut2			0.8165	0.2828
			(1.36)	(0.45)
_cut3			2.0272***	1.4962**
			(3.39)	(2.38)
_cut4			3.3446***	2.8181***
			(5.60)	(4.47)
_cut5			4.8751***	4.3527***
			(8.08)	(6.85)
_cut6			6.7130***	6.1897***
			(10.72)	(9.44)
_cut7			9.8135***	9.2886***
			(10.77)	(10.00)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	2,761	2,761	2,761	2,761
Adj. R-sq	0.196	0.199		
Log likelihood			–4,506.4639	–4,501.5217
Pseudo R-sq			0.071	0.072

Note: This table presents robustness tests and shows the results of the impacts of the interaction between ownership structure and product market competition on strategic information disclosure. In all models, product market competition is measured by four-firm concentration ratio (FFR). The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. Models (1) and (2) report the results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Models (3) and (4) present the results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. Models (1) and (3) examine the effects of the interaction between managerial ownership (MOWN) and product market competition on strategic information disclosure. Models (2) and (4) examine the effects of the interaction between blockholder ownership (BLOCK) and product market competition on strategic information disclosure. The FFR (four-firm concentration ratio) dummies indicate whether the FFR is in the highest, meddle, or lowest tercile of its empirical distribution. FFR dummies represent medium and lower levels of product market competition used to control for any direct impact of product market competition on corporate strategic information disclosure. FFR (high) is a dummy variable that equals 1 if the FFR of firm i in year t lies in the highest tercile of its empirical distribution. FFR (medium) is a dummy variable that equals 1 if the FFR of firm i in year t lies in the medium tercile of its empirical distribution. FFR (low) is a dummy variable that equals 1 if the FFR of firm i in year t lies in the lowest tercile of its empirical distribution. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics or z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

to affect the corporate strategic information disclosure policy when firms face strong product market competition. From Columns (4) to (6), it can be observed that the coefficients of BLOCK are negative and significant in HHI (high) sub-group and small and insignificant in HHI (medium) sub-group. However, the coefficient of BLOCK become large and significant again in HHI (low) sub-group. The results imply a mixed relationship between the interaction term (blockholder ownership and product market competition) and strategic information disclosure. Columns (7) to (12) report results for ordered logistic regressions. The dependent variable is the disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. The results show that the coefficients of interaction terms remain the same trend across HHI sub-groups as results of OLS regressions.

This study's sample is taken from S&P 500 indexed large firms, which are associated with more investment. Therefore, the Heckman two-stage analysis is employed to address the sample-selection bias. In the first stage regression (not reported), this study uses a probit model to predict the likelihood of the presence of blockholders in S&P 500 firms. In this model, I include all control variables used in my previous tests. Besides, I choose two additional instrumental variables (advertising expenses and the number of employees), which have no direct impact on strategic information disclosure and significantly correlated with corporate ownership structure. The second-stage regressions include the Inverse Mills ratio obtained from the first-stage regression. Table 3.10 reports the Heckman two-stage regression results. Columns (1) to (3) examine the effects of managerial ownership (MOWN) on strategic information disclosure under different levels of product market competition. The results show that the coefficient of MOWN is only negative and significant in HHI (high) sub-group. Columns (4) to (6) examine the effects of blockholder ownership (BLOCK) on strategic information disclosure under different levels of product market competition. The results show that the coefficients of BLOCK are negative and significant in HHI (high) sub-group and small and insignificant in HHI (medium) sub-group. However, the coefficient of BLOCK become large and significant again in HHI (low) sub-group. Finally, the Heckman two-stage regression results, again confirming that the previous conclusions

Table 3. 9 Robustness tests: The effects of ownership on strategic information disclosure conditional on various levels of product market competition (subsamples)

	HHI (high)	HHI(medium)	HHI(low)	HHI(high)	HHI(medium)	HHI(low)	HHI(high)	HHI(medium)	HHI(low)	HHI(high)	HHI(medium)	HHI(low)
	SID7 (Ordinary least squares regression)									SID (Ordered logistic regression)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
MOWN	–0.1728*	–0.0223	0.1039				–1.9563	–0.0619	0.7574			
	(–1.74)	(–0.29)	(0.96)				(–1.61)	(–0.08)	(0.80)			
BLOCK				–0.1614***	–0.0643	–0.1044*				–1.9580***	–0.6900	–1.1414*
				(–2.79)	(–1.22)	(–1.81)				(–2.88)	(–1.25)	(–1.91)
ROA	0.3453**	–0.3971***	–0.2762	0.3374**	–0.3987***	–0.2698	3.9982**	–4.1965***	–3.1765*	4.0857**	–4.2609***	–3.1872*
	(2.28)	(–2.59)	(–1.63)	(2.25)	(–2.60)	(–1.59)	(2.26)	(–2.64)	(–1.85)	(2.33)	(–2.67)	(–1.85)
Lev	–0.0212	–0.0485	0.0702	–0.0197	–0.0462	0.0848	–0.2636	–0.4730	0.6786	–0.2219	–0.4508	0.8336
	(–0.60)	(–1.05)	(1.35)	(–0.56)	(–1.01)	(1.64)	(–0.72)	(–1.05)	(1.32)	(–0.61)	(–1.00)	(1.62)
Liquidity	–0.0107	–0.0146**	–0.0130**	–0.0085	–0.0137**	–0.0124**	–0.1267	–0.1481**	–0.1353**	–0.0936	–0.1374**	–0.1300**
	(–1.39)	(–2.33)	(–2.37)	(–1.11)	(–2.19)	(–2.26)	(–1.62)	(–2.33)	(–2.52)	(–1.19)	(–2.17)	(–2.45)
MTB	–0.0093	–0.0107	0.0048	–0.0081	–0.0111	0.0078	–0.1375	–0.1007	0.0345	–0.1169	–0.1092	0.0661
	(–0.68)	(–0.84)	(0.48)	(–0.59)	(–0.88)	(0.78)	(–0.90)	(–0.80)	(0.36)	(–0.75)	(–0.87)	(0.69)
Size	0.0247***	–0.0058	0.0218***	0.0206**	–0.0082	0.0197**	0.2151**	–0.0293	0.1700**	0.1768*	–0.0578	0.1469*
	(2.59)	(–0.76)	(2.68)	(2.15)	(–1.04)	(2.40)	(2.10)	(–0.37)	(2.08)	(1.71)	(–0.71)	(1.78)
E/S	–0.2795**	0.1908**	–0.0376	–0.3176***	0.1856**	–0.0402	–3.4011**	1.9635**	–0.2862	–4.0085***	1.8946**	–0.2956
	(–2.37)	(2.40)	(–0.55)	(–2.66)	(2.34)	(–0.60)	(–2.48)	(2.33)	(–0.41)	(–2.86)	(2.27)	(–0.43)
Fin Cons	0.0243	0.0505***	–0.0330**	0.0231	0.0491***	–0.0386**	0.2460	0.4755***	–0.3612**	0.2373	0.4611***	–0.4256***
	(1.58)	(3.41)	(–2.03)	(1.51)	(3.30)	(–2.36)	(1.50)	(3.19)	(–2.25)	(1.45)	(3.09)	(–2.62)
Analyst	0.0002	0.0020*	0.0034***	0.0001	0.0019*	0.0034***	0.0085	0.0186*	0.0341***	0.0062	0.0177*	0.0350***
	(0.17)	(1.89)	(2.73)	(0.05)	(1.79)	(2.78)	(0.56)	(1.74)	(2.79)	(0.42)	(1.66)	(2.87)
BoardSize	0.0062	0.0029	0.0074*	0.0056	0.0031	0.0070*	0.0500	0.0218	0.0863**	0.0427	0.0248	0.0829**
	(1.29)	(0.74)	(1.88)	(1.15)	(0.80)	(1.81)	(0.99)	(0.55)	(2.14)	(0.84)	(0.62)	(2.06)
Meetings	0.0078***	–0.0018	0.0023	0.0081***	–0.0017	0.0023	0.0831**	–0.0119	0.0211	0.0856***	–0.0095	0.0212
	(2.74)	(–0.83)	(1.31)	(2.81)	(–0.76)	(1.32)	(2.55)	(–0.55)	(1.26)	(2.58)	(–0.43)	(1.27)
Constant	0.1394	0.1471	–0.0856	0.2050*	0.1798*	–0.0543						
	(1.25)	(1.64)	(–1.12)	(1.80)	(1.91)	(–0.70)						
_cut1							–1.1151	–0.2406	1.4090*	–1.8272	–0.6154	1.0861
							(–0.96)	(–0.27)	(1.85)	(–1.51)	(–0.66)	(1.42)
_cut2							0.2107	0.9482	2.8517***	–0.4963	0.5746	2.5302***
							(0.18)	(1.06)	(3.77)	(–0.41)	(0.61)	(3.34)
_cut3							1.5678	2.1706**	4.0503***	0.8679	1.7987*	3.7316***
							(1.36)	(2.43)	(5.37)	(0.73)	(1.92)	(4.93)
_cut4							2.9979***	3.5618***	5.3189***	2.3042*	3.1923***	5.0050***
							(2.62)	(3.96)	(7.00)	(1.95)	(3.39)	(6.57)
_cut5							4.4603***	5.1831***	6.8825***	3.7731***	4.8158***	6.5730***
							(3.87)	(5.70)	(8.90)	(3.17)	(5.06)	(8.50)

_cut6							6.3907***	7.1138***	8.5763***	5.7039***	6.7457***	8.2679***
							(5.36)	(7.57)	(10.56)	(4.64)	(6.88)	(10.21)
_cut7							8.1133***			7.4262***		
							(6.18)			(5.50)		
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	888	935	938	888	935	938	888	935	938	888	935	938
Adj. R-sq	0.235	0.212	0.195	0.239	0.213	0.197						
Log likelihood							–1,395.37	–1,498.56	–1,528.83	–1,392.29	–1,497.62	–1,527.00
Pseudo R-sq							0.100	0.082	0.073	0.102	0.082	0.074

Note: This table shows the results of the impacts of ownership structure on strategic information disclosure conditional on various levels of product market competition. The full sample are divided into highest, medium, and lowest product market competition sub-samples. HHI is product market competition, measured by Herfindahl-Hirschman index. The calculation of the HHI index is based on firms' sales. The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. Models (1), (4), (7), and (10) report the results for the highest HHI index group. Models (2), (5), (8), and (11) report the results for the middle HHI index group. Models (3), (6), (9), and (12) report the results for the lowest HHI index group. Models (1) to (6) report the results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Models (7) to (12) present results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. Models (1) to (3) and Models (7) to (9) examine the effects of managerial ownership (MOWN) on strategic information disclosure under different levels of product market competition. Models (4) to (6) and Models (10) to (12) examine the effects of blockholder ownership (BLOCK) on strategic information disclosure under different levels of product market competition. All industries are defined by 2-digit SIC codes. All regressions include year and industry fixed effects. The t-statistics or z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Table 3. 10 Robustness tests: The effects of ownership on strategic information disclosure conditional on various levels of product market competition (Heckman two-stage analysis)

	HHI (high)	HHI(medium)	HHI(low)	HHI(high)	HHI(medium)	HHI(low)
	(1)	(2)	(3)	(4)	(5)	(6)
MOWN	–0.1872*	0.0528	–0.1651			
	(–1.78)	(0.52)	(–0.50)			
BLOCK				–0.1648*	–0.0541	–0.3504**
				(–1.76)	(–0.69)	(–2.55)
ROA	0.5339*	–0.7422***	–0.4690	0.5211*	–0.7416***	–0.4703
	(1.90)	(–3.27)	(–1.21)	(1.86)	(–3.26)	(–1.22)
Lev	–0.0893*	–0.0567	–0.0138	–0.0823*	–0.0634	0.0098
	(–1.80)	(–0.81)	(–0.10)	(–1.67)	(–0.91)	(0.07)
Liquidity	–0.0215	–0.0222**	–0.0114	–0.0153	–0.0240***	–0.0205
	(–1.21)	(–2.40)	(–0.84)	(–0.87)	(–2.66)	(–1.47)
MTB	0.0075	–0.0334	–0.0262	0.0065	–0.0373	–0.0166
	(0.37)	(–1.42)	(–0.75)	(0.33)	(–1.58)	(–0.47)
Size	0.0567***	–0.0016	0.0221	0.0493***	–0.0053	0.0162
	(3.17)	(–0.14)	(1.50)	(2.85)	(–0.43)	(1.15)
E/S	–0.2403	0.1908	–0.1121	–0.2831	0.2073	–0.0623
	(–0.97)	(1.31)	(–0.66)	(–1.12)	(1.43)	(–0.37)
Fin Cons	–0.0081	0.0496*	–0.0260	–0.0108	0.0543**	–0.0214
	(–0.28)	(1.78)	(–0.61)	(–0.38)	(1.97)	(–0.53)
Analyst	–0.0016	–0.0001	0.0003	–0.0013	0.0005	0.0010
	(–0.51)	(–0.06)	(0.08)	(–0.41)	(0.21)	(0.28)
BoardSize	0.0274***	–0.0035	0.0161	0.0258***	–0.0014	0.0181*
	(3.82)	(–0.58)	(1.61)	(3.57)	(–0.23)	(1.82)
Meetings	0.0048	–0.0025	0.0021	0.0052	–0.0031	0.0008
	(0.76)	(–0.72)	(0.34)	(0.82)	(–0.91)	(0.13)
R&D intensity	–2.2013***	–0.4120*	–0.3382	–2.2109***	–0.4038*	–0.3951
	(–3.69)	(–1.90)	(–1.02)	(–3.71)	(–1.84)	(–1.25)
Beta	0.0423	–0.0747**	–0.0737	0.0441	–0.0658**	–0.0690
	(1.34)	(–2.56)	(–1.59)	(1.38)	(–2.25)	(–1.47)
Independence	0.0014*	0.0001	0.0017**	0.0014*	0.0000	0.0019**
	(1.78)	(0.18)	(2.18)	(1.83)	(0.08)	(2.38)
Firm age	–0.0667*	–0.0227	–0.0639*	–0.0626*	–0.0245	–0.0782**
	(–1.95)	(–1.32)	(–1.70)	(–1.89)	(–1.44)	(–2.10)
IMR	–0.1038	–0.1069	–0.1988	–0.0985	–0.0397	0.0323
	(–1.06)	(–0.65)	(–0.51)	(–0.97)	(–0.24)	(0.08)
Constant	–0.3837**	0.3365*	0.0438	–0.2973	0.3386*	0.2020
	(–1.98)	(1.66)	(0.13)	(–1.51)	(1.65)	(0.57)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	888	935	938	888	935	938
Adj. R-sq	0.347	0.207	0.074	0.347	0.207	0.106

Note: This table shows the Heckman two-stage analysis results. This table only presents the results from the second stage regression of the Heckman test. The second-stage regressions include the Inverse Mills ratio (IMR) obtained from the first-stage regression. This table shows the results of the impacts of ownership structure on strategic information disclosure conditional on various levels of product market competition. The full sample are divided into highest, medium, and lowest product market competition sub-samples. HHI is product market competition, measured by Herfindahl-Hirschman index. The calculation of the HHI index is based on firms' sales. The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. Columns (1) and (4) report the results for the highest HHI index group. Columns (2) and (5) report the results for the middle HHI index group. Columns (3) and (6) report the results for the lowest HHI index group. Columns (1) to (6) report the results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Columns (1) to (3) examine the effects of managerial ownership (MOWN) on strategic information disclosure under different levels of product market competition. Columns (4) to (6) examine the effects of blockholder ownership (BLOCK) on strategic information disclosure under different levels of product market competition. All industries are defined by 2-digit SIC codes. All regressions include year and industry fixed effects. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

still hold up fairly well after controlling for the problem of endogeneity.

Overall, the results of Table 3.9 and Table 3.10 are consistent with those of Table 3.6. Therefore, it can be confirmed that the effect of managerial ownership on strategic information is significant only in non-competitive industries. In other words, product market competition can be viewed as a substitute for managerial ownership to influence managers' disclosure decisions. Regarding blockholder ownership, the results combine substitutionary and complementary effects. The impact of blockholder ownership on strategic information disclosure decreases as product market competition increases, however, when competition reaches a certain level, the influence of blockholder ownership on strategic information disclosure becomes significant again.

3.4.3.4 Endogeneity between Product Market Competition and Disclosure

An alternative explanation for the negative relationship between product market competition and strategic information disclosure is that the act of nondisclosure causes the entry of competitors and generates proprietary costs; disclosure may eliminate the illusion of profit, thereby deterring entry and eliminating proprietary costs (Dye, 2001). Similarly, due to the proprietary costs of strategic information disclosure, companies may choose to disclose strategic information with a negative disclosure tone, thus deterring the potential entry. For example, Burks et al. (2018) indicate that the tone of companies' voluntary disclosure (including strategic information), becomes more negative when they face higher competition, implying that companies' incentives to disclose bad news to deter potential entrants are stronger than their capital market incentives to disclose good news. Also, according to Li (2010), corporate voluntary disclosure facilitates mergers and acquisitions among companies, thus resulting in more concentrated industry structures. Therefore, strategic information disclosure may reduce product market competition. Whittington and Yakis-Douglas (2012) indicate that communicating corporate strategies may reduce product market competition by announcing the company's ambitions to enhance its market share or future capacity, thereby reducing the number of potential competitors who consider entering the market. Considering endogeneity between competition and disclosure, I conduct a Granger causality test as follow:

$$SID7_{i,t} = \beta_1 SID7_{i,t-1} + \beta_2 HHI_{j,t-1} + Controls + Year\ \ Dummies + Industry\ \ Dummies; \quad \text{(eq. 3.8)}$$

$$HHI_{j,t} = \beta_1 SID7_{i,t-1} + \beta_2 HHI_{j,t-1} + Controls + Year\ \ Dummies + Industry\ \ Dummies, \quad \text{(eq. 3.9)}$$

where $SID7_{i,t-1}$ is the strategic information disclosure score of a firm i at year t–1. $HHI_{j,t-i}$ denotes product market competition for firm j at year t–1. Control variables are lagged for one year. The results are presented in Table 3.11; they show that the coefficient on HHI is statistically significant, but that on SID7 is not. Therefore, product market competition decreases the level of strategic information disclosure in a Granger sense. However, strategic information disclosure does not influence the industry concentration ratio in a Granger sense.

Table 3. 11 Robustness tests: Granger causality test

	SID7	HHI
	(1)	(2)
SID7	0.3882***	0.0000
	(19.47)	(0.03)
HHI	0.1633**	0.9651***
	(2.22)	(80.96)
ROA	0.0193	0.0193**
	(0.24)	(2.15)
Lev	–0.0195	0.0016
	(–0.77)	(0.75)
Liquidity	–0.0078**	–0.0002
	(–2.30)	(–1.06)
MTB	0.0040	0.0004
	(0.63)	(0.57)
Size	0.0027	0.0007**
	(0.59)	(2.39)
E/S	–0.0209	–0.0058***
	(–0.50)	(–2.91)
Fin Cons	0.0168**	0.0005
	(2.00)	(0.78)
Analyst	0.0011	0.0000
	(1.59)	(0.49)
BoardSize	0.0038*	–0.0002
	(1.83)	(–1.35)
Meetings	0.0010	0.0001
	(0.89)	(1.24)
Constant	0.0257	0.0206*
	(0.38)	(1.96)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Observations	2,537	2,486
Adj. R-sq	0.312	0.978

Note: This table reports robustness tests. Models (1) and (2) show the results of the Granger causality test. The dependent variable of Model (1) is strategic information disclosure (SID7). In Model (1), I regress SID7 on lagged HHI and lagged SID7, with same set of lagged control variables. The dependent variable of model 2 is HHI index (product market competition). In Model (2), I regress HHI on lagged SID7 and lagged HHI, with same set of lagged control variables. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

3.4.4 Additional Analysis on Strategic Information Disclosure

3.4.4.1 Strategic Information Disclosure Tone

My analyses in the previous sections are based on the quantity of strategic information disclosure. Burks et al. (2018) suggest that disclosure tone is a key element of basic disclosure theory: it assumes that good news is for the capital market and bad news is for competitors. Based on my previous results, due to the high proprietary costs, companies tend to provide less strategic information when product market competition increases. In this section, I look at whether the disclosure tone of strategic information changes when companies face different levels of product market competition. In addition, I also examine the interaction effect between ownership and product market competition on strategic information disclosure tone.

I apply Loughran and McDonald's (2011) dictionary of negative and positive words to evaluate strategic information extracted from all transcripts of my sample firms. Following Burks et al. (2018), I measure the disclosure tone by counting the numbers of positive words, negative words, and net positive words. Positive and Negative are measured as the number of words (each type) scaled by the total content words contained in strategic information-related sentences extracted from all transcripts during year t by firm i. Net positive is measured as positive words minus negative words, scaled by the total content words contained in strategic information-related sentences extracted from all transcripts during year t by firm i.

The results are presented in Table 3.12. Column (1) presents the association between HHI and Positive tone in strategic information disclosure. The coefficients of HHI (0.0116; t=2.66) is positive and statistically significant at 1% level, suggesting decreases in positive tone are associated with increased competition. These results also are economically significant. For instance, in column (1), the coefficient of 0.0116 on HHI implies that a one-standard deviation increase in HHI index is associated with a 3.55 % increase in positive words of strategic information disclosure. Results in Column (2) indicate that the association between Negative tone and HHI is negative, but insignificant. The findings in Column (3) suggest a negative and statistically

significant shift (the difference between positive and negative tone) in strategic information disclosure tone when firms face fierce competition in the market. The findings in this section are in accordance with Burks et al. (2018), who suggest that banks' disclosure tone becomes more negative when industry entry barriers are lower. The results can be interpreted as companies attempts to prevent competitors from entering the market by the negative change in disclosure tone (reducing in positive tone).

Columns (4) to (6) present the results of the interaction effect between managerial ownership and product market competition on strategic information disclosure tone. In order to examine the interaction effect between ownership and product market competition, this study uses HHI dummy to measure product market competition and classifies firms into firms facing high-competition and firms facing low-competition categories. HHI dummy is a dummy variable that equals 1 if the company with a HHI above the sample median, and 0 otherwise; a higher HHI represents a higher industry concentration and thus a lower product market competition. Column (4) shows that the coefficient on MOWN is negative and significant; the coefficient on MOWN*HHI (dummy) is positive and significant, implying that the industry concentration moderates the negative relationship between managerial ownership and positive disclosure tone of strategic information. Similarly, Column (6) shows that the coefficient on the interaction term of MOWN*HHI (dummy) is positive and significant. Column (5) indicates that the relationship between the interaction term MOWN*HHI (dummy) and negative disclosure tone is insignificantly. The results from Columns (4) to (6) suggest that managers owning more shares may prevent competitors from entering the market by encouraging a reduction in positive disclosure tone when companies face fierce product market competition; however, managers owning more shares are associated with a relatively positive disclosure tone of strategic information when product market competition is at a lower level, thereby benefitting from capital market. Columns (7) to (9) report the results of the interaction effect between blockholder ownership and product market competition on strategic information disclosure tone. The results show that there is no significant association between the interaction term BLOCK*HHI (dummy) and strategic information disclosure tone.

Table 3. 12 Disclosure tone of strategic information

	Positive	Negative	Net positive	Positive	Negative	Net positive	Positive	Negative	Net positive
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
HHI	0.0116***	–0.0026	0.0142***						
	(2.66)	(–1.40)	(2.81)						
MOWN*HHI (dummy)				0.0160**	0.0030	0.0129*			
				(2.37)	(1.27)	(1.83)			
MOWN				–0.0113**	–0.0035*	–0.0078			
				(–1.97)	(–1.65)	(–1.33)			
BLOCK*HHI (dummy)							0.0017	–0.0007	0.0025
							(0.46)	(–0.48)	(0.59)
BLOCK							–0.0012	0.0019	–0.0031
							(–0.41)	(1.46)	(–0.98)
HHI (dummy)				0.0018**	–0.0005	0.0023**	0.0019	–0.0002	0.0021
				(1.99)	(–1.25)	(2.25)	(1.59)	(–0.40)	(1.56)
ROA	0.0087*	–0.0028	0.0114**	0.0086*	–0.0028	0.0114**	0.0087*	–0.0027	0.0113**
	(1.75)	(–1.24)	(2.07)	(1.74)	(–1.25)	(2.06)	(1.75)	(–1.19)	(2.06)
Lev	0.0015	0.0000	0.0015	0.0014	0.0001	0.0013	0.0014	–0.0000	0.0014
	(0.90)	(0.02)	(0.83)	(0.85)	(0.09)	(0.75)	(0.85)	(–0.07)	(0.81)
Liquidity	–0.0007***	0.0001	–0.0008***	–0.0007***	0.0001	–0.0008***	–0.0007***	0.0001	–0.0008***
	(–2.63)	(1.52)	(–2.90)	(–2.61)	(1.61)	(–2.91)	(–2.60)	(1.37)	(–2.83)
MTB	–0.0003	0.0001	–0.0004	–0.0002	0.0001	–0.0004	–0.0003	0.0001	–0.0004
	(–0.79)	(0.58)	(–0.93)	(–0.61)	(0.66)	(–0.81)	(–0.75)	(0.52)	(–0.87)
Size	0.0000	0.0002*	–0.0001	0.0000	0.0002*	–0.0001	0.0000	0.0002**	–0.0002
	(0.07)	(1.69)	(–0.48)	(0.14)	(1.65)	(–0.40)	(0.01)	(2.10)	(–0.68)
E/S	–0.0114***	0.0005	–0.0119***	–0.0110***	0.0006	–0.0116***	–0.0113***	0.0007	–0.0120***
	(–4.57)	(0.44)	(–4.35)	(–4.41)	(0.48)	(–4.21)	(–4.51)	(0.55)	(–4.34)
Fin Cons	0.0022***	0.0004*	0.0018***	0.0021***	0.0004	0.0017***	0.0021***	0.0004*	0.0017***
	(4.21)	(1.66)	(3.03)	(4.05)	(1.63)	(2.91)	(4.02)	(1.79)	(2.79)
Analyst	–0.0001*	–0.0000**	–0.0000	–0.0001*	–0.0000**	–0.0000	–0.0001*	–0.0000**	–0.0000
	(–1.89)	(–2.25)	(–0.93)	(–1.82)	(–2.18)	(–0.88)	(–1.87)	(–2.19)	(–0.93)
BoardSize	0.0002*	–0.0001**	0.0004**	0.0002*	–0.0001**	0.0004**	0.0002*	–0.0001**	0.0004**
	(1.73)	(–2.54)	(2.43)	(1.76)	(–2.48)	(2.42)	(1.81)	(–2.52)	(2.49)
Meetings	–0.0002***	0.0000	–0.0002***	–0.0002***	0.0000	–0.0003***	–0.0002***	0.0000	–0.0002***
	(–2.97)	(0.82)	(–2.77)	(–3.03)	(0.77)	(–2.79)	(–2.96)	(0.75)	(–2.72)
Constant	0.0251***	0.0078***	0.0172***	0.0255***	0.0076***	0.0178***	0.0258***	0.0069***	0.0189***
	(5.80)	(4.95)	(3.54)	(5.88)	(4.84)	(3.68)	(5.78)	(4.30)	(3.82)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,505	2,505	2,505	2,505	2,505	2,505	2,505	2,505	2,505
Adj. R-sq	0.097	0.047	0.086	0.098	0.046	0.086	0.097	0.047	0.086

Note: This table presents the results of the impacts of product market competition (HHI) and the interaction between competition and ownership control on disclosure tone of strategic information. HHI is product market competition, measured by Herfindahl-Hirschman index. The calculation of the HHI index is based on firms' sales. The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. Models (1) to (3) analyse the impact of product market competition on strategic information disclosure tone. Models (4) to (6) examine the interaction effects between product market competition and managerial ownership (MOWN) on strategic information disclosure tone. Models (7) to (9) examine the interaction effects between product market competition and blockholder ownership (BLOCK) on strategic information disclosure tone. MOWN*HHI (dummy) and BLOCK*HHI (dummy) are interaction terms. HHI (dummy) is a dummy variable that equals 1 if the company with a HHI index above the sample median, and 0 otherwise. The dependent variable of Models (1), (4), and (7) is positive strategic information disclosure tone. The dependent variable of Models (2), (5), and (8) is negative strategic information disclosure tone. The dependent variable of Models (3), (6), and (9) is strategic information disclosure tone change (the difference between positive tone and negative tone). All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

3.4.4.2 The Effects of Ownership and Product Market Competition on Various Categories of Strategic Information Disclosure

I further test the effects of ownership and product market competition on various categories of strategic information disclosure. Following Agapova and Volkov (2019), the current study classifies strategic information into seven categories: mergers and acquisitions, research and development, consolidation, divestitures, cost control, move (offices, facilities), and growth (expansion). Next, I measure each disclosure category using a binary variable. Specifically, this variable equals 1 if firm i discloses strategic information in that category in year t, and 0 if it does not.

I employ a probit regression to test the effects of ownership and product market competition on various categories of strategic information disclosure. The results are reported in Table 3.13. The dependent variable of Column (1) is M&A: a dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise. The dependent variable of Column (2) is Cost: a dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise. The dependent variable of Column (3) is Divest: a dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise. The dependent variable of Column (4) is Consolidate: a dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise. The dependent variable of Column (5) is Growth: a dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise. The dependent variable of Column (6) is R&D: a dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise. The dependent variable of Column (7) is Move: a dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise. The results show that managerial ownership (MOWN) significantly increases strategic information disclosure related to M&A, and significantly decreases strategic information disclosure related to Move. Blockholder ownership (BLOCK) significantly decreases strategic information disclosure related to M&A, consolidation, growth (expansion), and R&D. These results show that blockholder ownership has a greater influence on corporate strategic information disclosure decisions than managerial ownership. These results

also support the findings of my main analysis (companies with blockholders tend to provide less strategic information). With regard to HHI, the results show that product market competition negatively and significantly influences strategic information disclosure related to cost control, growth (expansion), R&D, and Move. These results also support the findings of my main analysis (firms tend to provide less strategic information when they face increased competition).

Table 3. 13 The effects of ownership and product market competition on various categories of strategic information disclosure (probit regression)

	M&A	Cost	Divest	Consolidate	Growth	R&D	Move
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
MOWN	0.9478**	–0.3932	–0.6648	0.2028	–0.1214	0.3477	–2.4542**
	(2.20)	(–0.82)	(–1.05)	(0.50)	(–0.29)	(0.84)	(–2.42)
BLOCK	–0.5398**	0.0871	0.0889	–0.5863**	–0.6026**	–0.8253***	0.3937
	(–2.07)	(0.30)	(0.26)	(–2.22)	(–2.33)	(–2.94)	(0.88)
HHI	0.0196	1.5140**	–0.3762	0.0168	2.7151***	1.7045***	2.5933**
	(0.04)	(2.20)	(–0.43)	(0.03)	(4.43)	(2.60)	(2.17)
ROA	–0.7478	–0.3386	–2.4836***	–2.1539***	0.5361	0.7648	–1.8333*
	(–1.22)	(–0.48)	(–3.07)	(–3.54)	(0.87)	(1.18)	(–1.66)
Lev	0.3017	–0.2048	0.0488	–0.1029	–0.0839	–0.0102	0.5707*
	(1.62)	(–0.98)	(0.19)	(–0.55)	(–0.43)	(–0.05)	(1.72)
Liquidity	–0.0800***	0.0274	–0.0831**	–0.0349	–0.0515**	–0.0369	–0.0245
	(–3.23)	(0.98)	(–2.15)	(–1.40)	(–2.01)	(–1.29)	(–0.56)
MTB	–0.0390	–0.1144**	0.0467	–0.0332	0.1105**	0.0514	–0.0759
	(–0.84)	(–2.08)	(0.84)	(–0.73)	(2.34)	(1.03)	(–0.93)
Size	0.0597*	–0.0073	0.1404***	0.0112	–0.0451	0.0369	0.0043
	(1.80)	(–0.19)	(3.28)	(0.34)	(–1.31)	(0.98)	(0.07)
E/S	–0.0309	0.2869	–0.1800	–0.5505*	–0.0005	0.1929	1.0953**
	(–0.10)	(0.86)	(–0.47)	(–1.76)	(–0.00)	(0.54)	(2.02)
Fin Cons	–0.0048	–0.0091	0.1535**	0.1007*	0.0648	0.1061	–0.0611
	(–0.08)	(–0.13)	(1.98)	(1.67)	(1.05)	(1.58)	(–0.52)
Analyst	–0.0010	0.0087	–0.0097	0.0024	0.0046	0.0290***	0.0118
	(–0.20)	(1.54)	(–1.56)	(0.51)	(0.93)	(5.22)	(1.26)
BoardSize	0.0136	0.0031	–0.0048	0.0332**	0.0395**	0.0822***	0.0195
	(0.90)	(0.18)	(–0.24)	(2.21)	(2.51)	(4.70)	(0.67)
Meetings	0.0220**	0.0102	0.0142	0.0212**	–0.0086	0.0002	–0.0050
	(2.44)	(1.08)	(1.34)	(2.43)	(–0.96)	(0.02)	(–0.24)
Constant	–0.7343	–1.6621***	–1.0266*	–0.4383	0.2178	–3.6734***	–2.8917***
	(–1.49)	(–2.60)	(–1.73)	(–0.87)	(0.39)	(–5.52)	(–3.70)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,749	2,729	2,540	2,757	2,749	2,725	2,435
Pseudo R-sq	0.082	0.053	0.077	0.092	0.073	0.293	0.089

Note: This table presents the results of the impacts of ownership and product market competition on various categories of strategic information disclosure. All models are probit regressions. The dependent variable of Model (1) is M&A: a dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise. The dependent variable of Model (2) is Cost: a dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise. The dependent variable of Model (3) is Divest: a dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise. The dependent variable of Model (4) is Consolidate: a dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise. The dependent variable of Model (5) is Growth: a dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise. The dependent variable of Model (6) is R&D: a dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise. The dependent variable of Model (7) is Move: a dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise. MOWN is managerial ownership. BLOCK is blockholder ownership. HHI is product market competition, measured by Herfindahl-Hirschman index. The calculation of the HHI index is based on firms' sales. The higher the value suggests higher concentration in the industry, which means relative less competition in the market, and vice versa. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Overall, the results of these tests in Table 3.13 indicate that ownership structure and product market competition both have negative impacts on various categories of strategic information. These results are consistent with my previous analysis of this study. Specifically, blockholder ownership has a greater impact on corporate strategic information disclosure decisions than managerial ownership; companies with more blockholders are likely to release a lower level of strategic information to the public; and firms tend to reduce the level of strategic information disclosure when they face higher product market competition.

3.4.4.3 The Effects of Strategic Information Disclosure on Profitability, Firm Value, and Access to Finance

Barth et al. (2017) show that a higher quality of reporting on strategic focus and future orientation is positively associated with firm value. Uyar and Kılıç (2012) also find that strategic information disclosure is value-relevant. Such disclosure has a positive effect on firm value. Several studies further suggest that companies with strategic information disclosure are more likely to obtain financing. According to Bhojraj et al. (2004), companies that need to access the capital market more frequently tend to have strong incentives to inform the market of their plans to deal with new risks and take advantage of emerging opportunities. Sieber et al. (2014) also find that strategic information disclosure reduces information asymmetry, and such information is useful for investors. Inspired by these studies, I am interested to see whether companies with strategic information disclosure can increase profit-related benefits and firm value, and also the effect of strategic information disclosure on access to finance. My previous main findings show that companies with different ownership structure have different impacts on corporate strategic information disclosure policy when they face different levels of product market competition. Accordingly, this section examines how strategic information disclosure interact with ownership controls and product market competition to influence firms' profitability, firm value, and access to finance.

Following Li et al. (2021), all independent variables are lagged by one year. First, I look into the interaction effects between strategic information disclosure and product market

competition SID7*HHI (dummy) on firms' access to finance (measured as KZ index[14]), firms' profitability (measured as ROA), and firm value (measured as Tobin's Q), respectively. Table 3.14, Column (1) shows that the coefficient on SID7 is positive and significant; the coefficients on SID7*HHI (dummy) is negative and significant, implying that the industry concentration moderates the positive relationship between strategic information disclosure and KZ index (HHI dummy is a dummy variable that equals 1 if the company with a HHI above the sample median, and 0 otherwise; a higher HHI represents a higher industry concentration and thus a lower product market competition; a higher value of KZ index means that the company is more difficult to obtain financing). The results of Column (1) suggest that strategic information disclosure results in harder access to finance when companies face fierce product market competition. However, such negative effect is moderated by industry concentration, and therefore corporate strategic information disclosure leads to relatively easier access to finance when product market competition is at a lower level. Similarly, Columns (2) and (3) show that the coefficients on SID7*HHI (dummy) are both positive and significant, implying that industry concentration moderates the negative relationship between strategic information disclosure and firm profitability (ROA) and firm value (Tobin's Q). Therefore, compared with firms with strategic information disclosure in competitive industries, corporate strategic information disclosure leads to relatively greater firm performance and higher firm value when companies operate in non-competitive industries. These results explained my previous main finding that companies tend to provide less strategic information when facing fierce product market competition due to the high proprietary cost. Consequently, companies choose to disclose more strategic information when product market competition is decreased, thus, resulting in relatively easier access to finance, improved firm profitability, and higher firm value.

Second, I examine the interaction between strategic information disclosure and

[14] Following Kaplan and Zingales (1997), Baker et al. (2003), Cheng et al. (2014), and Li et al. (2021), this study uses their regression coefficients to construct a KZ index to measure firms' access to finance. A higher KZ index value means that the company finds it more difficult to obtain financing. In addition, Following Kaplan and Zingales (1997), Cheng et al. (2014), and Li et al. (2021), I only control for firm size.

Table 3. 14 The effects of strategic information disclosure on access to finance, profitability, and firm value

	Access to finance KZ index	Firm profitability ROA	Firm value Tobin's Q	Access to finance KZ index	Firm profitability ROA	Firm value Tobin's Q	Access to finance KZ index	Firm profitability ROA	Firm value Tobin's Q
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SID7*HHI (dummy)	–0.4307**	0.0391**	0.7804***						
	(–2.30)	(2.52)	(3.98)						
SID7*MOWN (dummy)				0.1359	–0.0136	–0.2063			
				(0.80)	(–0.84)	(–1.16)			
SID7*BLOCK (dummy)							0.3295*	–0.0256*	–0.0877
							(1.93)	(–1.68)	(–0.49)
HHI (dummy)	0.3346***	–0.0191**	–0.0617						
	(2.61)	(–2.21)	(–0.46)						
MOWN (dummy)				0.0551	0.0014	0.0192			
				(0.67)	(0.19)	(0.21)			
BLOCK (dummy)							0.0238	0.0040	–0.0310
							(0.29)	(0.59)	(–0.37)
SID7	0.4517***	–0.0360***	–0.7845***	0.1965	–0.0112	–0.3230**	0.1101	–0.0069	–0.3909***
	(3.39)	(–2.65)	(–5.49)	(1.57)	(–0.93)	(–2.52)	(1.03)	(–0.64)	(–3.35)
Size	0.0540***	–0.0027*	–0.1287***	0.0710***	–0.0033**	–0.1302***	0.0771***	–0.0036**	–0.1306***
	(3.47)	(–1.72)	(–5.71)	(4.36)	(–1.98)	(–5.55)	(4.80)	(–2.19)	(–5.55)
Liquidity		0.0079***	0.1805***		0.0081***	0.1793***		0.0080***	0.1779***
		(7.16)	(7.57)		(7.16)	(7.56)		(7.20)	(7.54)
MTB		–0.0022	0.4584***		–0.0022	0.4545***		–0.0023	0.4551***
		(–0.77)	(9.74)		(–0.77)	(9.72)		(–0.81)	(9.72)
BoardSize		–0.0025***	–0.0193		–0.0024***	–0.0219*		–0.0025***	–0.0230*
		(–3.31)	(–1.53)		(–3.19)	(–1.76)		(–3.31)	(–1.84)
Fin Cons		0.0048	–0.1273**		0.0046	–0.1141**		0.0046	–0.1136**
		(1.51)	(–2.43)		(1.45)	(–2.18)		(1.44)	(–2.19)
MTB		–0.0000***	–0.0000***		–0.0000***	–0.0000***		–0.0000***	–0.0000***
		(–3.31)	(–2.99)		(–3.15)	(–3.26)		(–2.86)	(–3.15)
Meetings		–0.0019***	–0.0356***		–0.0019***	–0.0366***		–0.0018***	–0.0358***
		(–3.25)	(–5.08)		(–3.34)	(–5.23)		(–3.22)	(–5.11)
Constant	–0.7904***	0.0871***	1.0547***	–0.7208***	0.0788***	1.1787***	–0.7057***	0.0788***	1.1927***
	(–3.40)	(2.86)	(3.04)	(–3.30)	(2.66)	(3.57)	(–3.28)	(2.63)	(3.72)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,732	2,573	2,563	2,732	2,573	2,563	2,732	2,573	2,563
Adj. R-sq	0.307	0.263	0.437	0.306	0.261	0.432	0.310	0.262	0.432

Note: This table shows the results of the effects of strategic information disclosure (SID7) on firm's access to finance, profitability, and firm value. Models (1) to (3) examines the interaction effects between strategic information disclosure and product market competition on firm's access to finance, profitability, and firm value, respectively. Models (4) to (6) examines the interaction effects between strategic information disclosure and management ownership (MOWN) on firm's access to finance, profitability, and firm value, respectively. Models (7) to (9) examines the interaction effects between strategic information disclosure and blockholder ownership (BLOCK) on firm's access to finance, profitability, and firm value, respectively. The dependent variable of Models (1), (4), and (7) is KZ index. The higher value of KZ index means that the company is more difficult to obtain financing. The dependent variable of Models (2), (5), and (8) is firms' profitability, measured by ROA. The dependent variable of Models (3), (6), and (9) is firm value, measured by Tobin's Q. HHI (dummy) is a dummy variable that equals 1 if the firm with a HHI index above the sample median, and 0 otherwise. MOWN (dummy) is a dummy variable that equals 1 if the company's management ownership is above the sample median, and 0 otherwise. BLOCK (dummy) is a dummy variable that equals 1 if the company's blockholder ownership is above the sample median, and 0 otherwise. All independent variables are lagged by one year. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

ownership control on firms' access to finance, firms' profitability, and firm value, respectively. In order to examine the interaction effect between ownership structure and strategic information disclosure, this study uses MOWN (dummy) and BLOCK (dummy) to measure ownership structure and classifies firms into firms with a higher level of managerial/blockholder ownership and firms with a lower level of managerial/blockholder ownership categories. MOWN (dummy) is a dummy variable that equals 1 if the company's managerial ownership is above the sample median, and 0 otherwise. BLOCK (dummy) is a dummy variable that equals 1 if the company's blockholder ownership is above the sample median, and 0 otherwise. HHI dummy is a dummy variable that equals 1 if the company with a HHI above the sample median, and 0 otherwise; a higher HHI represents a higher industry concentration and thus a lower product market competition. SID7*MOWN (dummy) and SID7*BLOCK (dummy) are interaction terms. Columns (4) to (6) show that the interaction between management ownership and strategic information disclosure (SID7*MOWN (dummy)) has no significant impact on firm's access to finance, firms' profitability, and firm value. Column (7) shows that the interaction between blockholder ownership and strategic information disclosure (SID7*BLOCK (dummy)) negatively and significantly affect firms' access to finance (positively related to the KZ index), suggesting that the increase in strategic information disclosure leads to harder access to finance when blockholder control is greater in the company. The underlying reason may be the investor-management disagreement. According to Agapova and Volkov (2019), strategic information disclosure is subjective in nature; thus, investors' interpretations may differ due to their heterogeneous beliefs. Consequently, investors may be reluctant to provide capital. Therefore, strategic information disclosure activities make it more difficult for companies to obtain financing when there is greater control by blockholders. Correspondingly, Column (8) shows that blockholder ownership and strategic information disclosure interact with each other to negatively affect firms' profitability. However, in Column (9), I do not find a significant association between the interaction term and firm value.

3.4.4.4 The Effects of Strategic Information Disclosure (various categories) on Profitability, Firm Value, and Access to Finance

My previous findings show that corporate strategic information disclosure influence

firms' profitability, firm value, and access to finance. However, the previous analysis only investigates the overall level of strategic information disclosure. Therefore, this study further tests the effects of strategic information disclosure (various categories) on profitability, firm value, and access to finance. Following Agapova and Volkov (2019), the current study classifies strategic information into seven categories: mergers and acquisitions, research and development, consolidation, divestitures, cost control, move (offices, facilities), and growth (expansion). Next, I measure each disclosure category using a binary variable. Specifically, this variable equals 1 if firm i discloses strategic information in that category in year t, and 0 if it does not.

I employ OLS regressions to test the effects of strategic information disclosure (various categories) on access to finance. The results are reported in Table 3.15. The dependent variable is firm's access to finance, measured by KZ index. The higher value of KZ index means that the company is more difficult to obtain financing. M&A: a dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise. Cost: a dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise. Divest: a dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise. Consolidate: a dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise. Growth: a dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise. R&D: a dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise. Move: a dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise. All independent variables are lagged by one year. Based on the results, it can be observed that the coefficient on M&A (t=3.32), Divest (t=1.83), Consolidate (t=2.19), and Move (t=2.22) are positive and statistically significant, suggesting that strategic information disclosure related to M&A, Divest, Consolidate, and Move result in harder access to finance for firms.

Table 3. 15 The effects of strategic information disclosure (various categories) on access to finance (KZ index)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
M&A	0.1204***						
	(3.32)						
Cost		0.0564					
		(1.52)					
Divest			0.0927*				
			(1.83)				
Consolidate				0.0735**			
				(2.19)			
Growth					0.0134		
					(0.35)		
R&D						–0.0290	
						(–0.67)	
Move							0.1537**
							(2.22)
Size	0.0601***	0.0643***	0.0620***	0.0623***	0.0645***	0.0663***	0.0642***
	(3.80)	(4.05)	(3.87)	(3.94)	(4.05)	(4.25)	(4.03)
Constant	–0.5658***	–0.5633***	–0.5675***	–0.5664***	–0.5676***	–0.5709***	–0.5594***
	(–2.69)	(–2.69)	(–2.72)	(–2.72)	(–2.66)	(–2.76)	(–2.67)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2753	2753	2753	2753	2753	2753	2753
Adj. R-sq	0.304	0.302	0.302	0.302	0.301	0.301	0.302

Note: This table shows the results of the effects of strategic information disclosure (various categories) on firm's access to finance. The dependent variable is firm's access to finance, measured by (KZ index). The higher value of KZ index means that the company is more difficult to obtain financing. M&A: a dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise. Cost: a dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise. Divest: a dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise. Consolidate: a dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise. Growth: a dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise. R&D: a dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise. Move: a dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise. All independent variables are lagged by one year. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Secondly, I examine the effects of strategic information disclosure (various categories) on firms' profitability. The results are reported in Table 3.16. The dependent variable is firms' profitability, measured by ROA. Based on the results, it can be observed that the coefficient on M&A (t=–2.21), Cost (t=–1.92), and Consolidate (t=–3.41) are negative and statistically significant, suggesting that strategic information disclosure related to M&A, Cost, and Consolidate result in lower firms' profitability.

Table 3. 16 The effects of strategic information disclosure (various categories) on firm profitability (ROA)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
M&A	–0.0062**						
	(–2.21)						
Cost		–0.0072*					
		(–1.92)					
Divest			–0.0071				
			(–1.45)				
Consolidate				–0.0093***			
				(–3.41)			
Growth					0.0032		
					(1.11)		
R&D						0.0023	
						(0.75)	
Move							0.0019
							(0.34)
Size	–0.0028*	–0.0030*	–0.0028*	–0.0029*	–0.0030*	–0.0031*	–0.0030*
	(–1.81)	(–1.89)	(–1.79)	(–1.85)	(–1.94)	(–1.94)	(–1.92)
Liquidity	0.0080***	0.0083***	0.0081***	0.0080***	0.0083***	0.0082***	0.0082***
	(7.22)	(7.45)	(7.33)	(7.26)	(7.45)	(7.41)	(7.41)
MTB	–0.0023	–0.0025	–0.0022	–0.0023	–0.0024	–0.0023	–0.0023
	(–0.82)	(–0.87)	(–0.78)	(–0.80)	(–0.87)	(–0.82)	(–0.81)
BoardSize	–0.0028***	–0.0028***	–0.0028***	–0.0027***	–0.0029***	–0.0029***	–0.0028***
	(–3.78)	(–3.77)	(–3.82)	(–3.61)	(–3.82)	(–3.85)	(–3.79)
Fin Cons	0.0044	0.0044	0.0047	0.0049	0.0044	0.0044	0.0044
	(1.40)	(1.40)	(1.51)	(1.58)	(1.41)	(1.41)	(1.42)
MTB	–0.0000***	–0.0000***	–0.0000***	–0.0000***	–0.0000***	–0.0000***	–0.0000***
	(–3.13)	(–3.36)	(–3.37)	(–3.02)	(–3.12)	(–3.37)	(–3.35)
Meetings	–0.0019***	–0.0019***	–0.0019***	–0.0019***	–0.0019***	–0.0019***	–0.0019***
	(–3.32)	(–3.42)	(–3.39)	(–3.31)	(–3.44)	(–3.44)	(–3.44)
Constant	0.0759**	0.0751**	0.0760**	0.0758**	0.0729**	0.0761**	0.0746**
	(2.56)	(2.52)	(2.57)	(2.54)	(2.45)	(2.53)	(2.51)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2629	2629	2629	2629	2629	2629	2629
Adj. R-sq	0.263	0.263	0.263	0.265	0.262	0.262	0.262

Note: This table shows the results of the effects of strategic information disclosure (various categories) on firm's profitability. The dependent variable is firm's profitability, measured by ROA. M&A: a dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise. Cost: a dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise. Divest: a dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise. Consolidate: a dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise. Growth: a dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise. R&D: a dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise. Move: a dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise. All independent variables are lagged by one year. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Table 3. 17 The effects of strategic information disclosure (various categories) on firm value (Tobin's Q)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
M&A	–0.1741***						
	(–4.05)						
Cost		–0.0720					
		(–1.35)					
Divest			–0.2022***				
			(–4.10)				
Consolidate				–0.2345***			
				(–5.51)			
Growth					0.0454		
					(1.03)		
R&D						0.0635	
						(1.13)	
Move							–0.0488
							(–0.45)
Size	–0.1238***	–0.1286***	–0.1235***	–0.1257***	–0.1294***	–0.1321***	–0.1289***
	(–5.57)	(–5.67)	(–5.49)	(–5.62)	(–5.73)	(–5.81)	(–5.71)
Liquidity	0.1834***	0.1899***	0.1857***	0.1828***	0.1902***	0.1896***	0.1892***
	(7.89)	(8.09)	(7.89)	(7.80)	(8.09)	(8.07)	(8.07)
MTB	0.4460***	0.4451***	0.4491***	0.4476***	0.4449***	0.4456***	0.4467***
	(9.69)	(9.60)	(9.67)	(9.61)	(9.60)	(9.61)	(9.65)
BoardSize	–0.0324**	–0.0327**	–0.0333***	–0.0295**	–0.0333***	–0.0339***	–0.0329**
	(–2.55)	(–2.55)	(–2.60)	(–2.29)	(–2.59)	(–2.61)	(–2.56)
Fin Cons	–0.1249**	–0.1246**	–0.1159**	–0.1114**	–0.1247**	–0.1248**	–0.1242**
	(–2.38)	(–2.37)	(–2.22)	(–2.15)	(–2.37)	(–2.37)	(–2.36)
MTB	–0.0000***	–0.0000***	–0.0000***	–0.0000***	–0.0000***	–0.0000***	–0.0000***
	(–3.36)	(–3.71)	(–3.76)	(–3.25)	(–3.57)	(–3.81)	(–3.72)
Meetings	–0.0356***	–0.0370***	–0.0366***	–0.0351***	–0.0371***	–0.0371***	–0.0373***
	(–5.03)	(–5.22)	(–5.21)	(–5.08)	(–5.24)	(–5.24)	(–5.26)
Constant	1.2116***	1.1820***	1.2129***	1.2022***	1.1520***	1.2159***	1.1805***
	(3.83)	(3.78)	(3.87)	(3.81)	(3.66)	(3.84)	(3.77)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2619	2619	2619	2619	2619	2619	2619
Adj. R-sq	0.431	0.427	0.429	0.434	0.427	0.427	0.427

Note: This table shows the results of the effects of strategic information disclosure (various categories) on firm value. The dependent variable is firm value, measured by Tobin's Q. M&A: a dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise. Cost: a dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise. Divest: a dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise. Consolidate: a dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise. Growth: a dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise. R&D: a dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise. Move: a dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise. All independent variables are lagged by one year. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Finally, I examine the effects of strategic information disclosure (various categories) on firm value. The results are reported in Table 3.17. The dependent variable is firm value, measured by Tobin's Q. Based on the results, it can be observed that the coefficient on M&A (t=−4.05), Divest (t=−4.10), and Consolidate (t=−5.51) are negative and statistically significant, suggesting that strategic information disclosure related to M&A, Divest, and Consolidate result in poor firm value.

3.4.4.5 The Non-linear Effects of Strategic Information Disclosure

Given that there are both costs and benefits arising from strategic information disclosure, the effects of strategic information disclosure may not be linear. Therefore, this study also examines the potential of such effects.

Table 3.18 presents the results related to how strategic information disclosure affects firm value. The dependent variable is firm value, measured by Tobin's Q. SID7 is strategic information disclosure score that ranges from 0 to 1. SID72 is the square of SID7. All independent variables are lagged by one year. First, a OLS regression of Column (1) generates a significant and negative coefficient of –0.6735 (t=–6.87) on SID7, at the 1% level, suggesting that a negative impact of strategic information disclosure on firm value. To determine whether the level of firm value decreases monotonically with strategic information disclosure, I further regress firm value on strategic information disclosure as well as the square of strategic information disclosure. The regression of Column (2) generates a significant and positive coefficient of 0.5989 (t=2.18) on SID7, at the 5% level, however, a significant and negative the coefficient of –1.7388 (t=–5.09) on SID72, at the 1% level, indicating an inverted U-shaped relationship between the strategic information disclosure and firm value. According to the coefficients and signs of SID7 and SID72, the minimum turning point is SID7=0.1722.[15] Specifically, the inverted U-shaped relationship implies that, when the level of strategic information disclosure within the range from 0 to 0.1722, firm value

[15] The turning point of a squared function is calculated based on the assumption that all other variables are constant. Let denote Tobin's Q as y and SID7 as x: $y = 0.5989x - 1.7388x2$, the turning point is found by differentiating y with respect to x, that is, $dy/dx = 0$, so $x = -0.5989/(2 \times -1.7388) = 0.1722$.

increases as strategic information disclosure increases, but when the level of strategic information disclosure within the range from 0.1722 to 1 (the maximum value of SID7 in my sample), firm value decreases as strategic information disclosure increases. Economically, an increase in strategic information disclosure within the range from 0 to the minimum turning point of 0.1722 results in an increase in Tobin's Q by 0.1264, which is approximately 5.66% (=0.1264/2.2318) of the average Tobin's Q for all sample firms. Further, an increase in strategic information disclosure within the range from 0.1722 to the maximum value of SID7 of 1 results in a decrease in Tobin's Q by 0.3669, which is approximately 44.81% (=0.3669/2.2318) of the average Tobin's Q in our sample. The inverted U-shaped relationship between strategic information disclosure and firm value holds even after controlling for various control variables (see Column 3 in Table 3.18). Overall, these results imply that strategic information disclosure generates benefits for companies such as information asymmetry reduction benefits, however, a higher level of strategic information disclosure results in substantial proprietary costs. Therefore, companies should consider the quantity, and trade-off the benefits and costs when they are making strategic information disclosure decisions.[16]

3.5 Summary

This study analyses the impacts of ownership structure and product market competition on strategic information disclosure. This study also examines whether ownership

structure (managerial ownership and blockholder ownership) interacts with product market competition to influence managers' decisions regarding strategic information disclosure. Based on a sample of American firms listed in S&P 500 index over the period from 2009 to 2018, this study finds that managerial ownership is negatively and significantly affect strategic information disclosure in non-competitive industries only, therefore, product market competition can be viewed as a substitute for managerial ownership. Furthermore, my findings show that companies with higher blockholder ownership are associated with fewer agency problems, and thus, have less incentive to disclose more strategic information. However, when I examine the interaction between

[16] I also examine how strategic information disclosure affects firm profitability and access to finance, however, the results show that there is no significant non-linear relationship between strategic information disclosure and firm profitability/access to finance.

blockholder ownership and product market competition, the results show that there is a

Table 3. 18 The non-linear effects of strategic information disclosure

	(1)	(2)	(3)
SID7	–0.6735***	0.5989**	0.5586*
	(–6.87)	(2.18)	(1.91)
$SID7^2$		–1.7388***	–1.3322***
		(–5.09)	(–3.86)
Size			–0.1195***
			(–5.32)
Liquidity			0.1827***
			(7.77)
MTB			0.4481***
			(9.64)
BoardSize			–0.0299**
			(–2.34)
Fin Cons			–0.1179**
			(–2.27)
MTB			–0.0000***
			(–3.76)
Meetings			–0.0359***
			(–5.18)
Constant	1.2992***	1.1392***	1.0825***
	(10.44)	(8.42)	(3.40)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	3158	3158	2619
Adj. R-sq	0.313	0.317	0.433

Note: This table shows the non-linear effects of strategic information disclosure on firm value. The dependent variable is firm value, measured by Tobin's Q. SID7 is strategic information disclosure score that ranges from 0 to 1. $SID7^2$ is the square of SID7. All independent variables are lagged by one year. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

mixed relationship between the interaction term and strategic information disclosure. Such a mixed relationship implies that the interaction between blockholder ownership and product market competition combines both substitutionary and complementary effects on managers' strategic information disclosure decisions. Specifically, the effect of blockholder ownership on strategic information disclosure decreases as product market competition increases, however, when competition reaches a certain level, the influence of blockholder ownership on strategic information disclosure becomes significant again. The main findings in this study are robust across a series of checks, including additional controls, alternative measures of product market competition, sub-sample analysis, and endogeneity between competition and strategic information disclosure.

I further conduct additional analysis on the disclosure tone of strategic information. My findings suggest that there is decrease in positive tone of strategic information disclosure when firms face fierce competition in the market. The negative shift implies that companies' attempt to prevent competitors from entering the market by the negative change in disclosure tone. In addition, I find that managers owning more shares are associated with a reduction in positive disclosure tone when companies face fierce product market competition; however, companies with a higher level of managerial ownership tend to disclose strategic information in a relatively positive tone when product market competition is at a lower level, thereby benefitting from capital market. However, the interaction between blockholder control and product market competition has no significant influence on strategic information disclosure tone. I also test the impacts of ownership and product market competition on various categories of strategic information disclosure in my additional analysis. I find that ownership structure and product market competition both have negative impacts on various categories of strategic information. These results are consistent with my previous analysis of this study. Specifically, blockholder ownership has a greater impact on corporate strategic information disclosure decisions than managerial ownership; companies with more blockholders tend to release less strategic information to the public; firms tend to provide less strategic information disclosure when they face higher product market competition. Finally, I extend the study to investigate the interaction between strategic information disclosure and product market competition on firms' access to finance, profitability, and firm value. I also test the interaction between strategic information disclosure and ownership control on firms' access to finance, profitability, and firm value. My results show that compared with firms with strategic information disclosure in competitive industries, corporate strategic information disclosure leads to relatively easier access to finance, greater firm performance and higher firm value when companies operate in non-competitive industries. I also find that increase in strategic information disclosure leads to harder access to finance when blockholder control is greater in the company. The underlying reason may be due to the investor-management disagreement. In addition, blockholder ownership and strategic information disclosure interact with each other to negatively affect firms' profitability.

Overall, this study provides valuable suggestions for companies. First, companies

should adjust their corporate governance structure based on different levels of product market competition, and thus reduce the cost of internal monitoring. The underlying reason is that, competitive pressure imposes discipline on managers to reduce agency problems, thus ensuring that managers are obliged to make optimal decisions and maximize profits. Second, companies should consider a trade-off between the benefits and costs of releasing strategic information and make appropriate decisions about effective disclosure activities for ensuring the effective operation of companies, based on the different levels of product market competition and ownership control. Specifically, companies should encourage less strategic information disclosure when they face fierce product market competition, as such disclosure leads to harder access to finance, poor firm performance, and lower firm value when companies operate in competitive industries. Besides, companies should reduce the level of strategic information disclosure when blockholder control is greater in the company, as such disclosure may result in investor-management disagreement, and thus lead to bad outcomes.

CHAPTER 4 MANAGERIAL ABILITY AND STRATEGIC INFORMATION DISCLOSURE

4.1 Introduction

In this chapter, I explore the association between managerial ability and corporate strategic information disclosure decisions. Researchers have long argued that managers have unique and significant influence on corporate decisions such as risk-taking behaviour (Andreou et al., 2016; Curi and Lozano-Vivas, 2020; Pathan, 2009; Yung and Chen, 2018), voluntary disclosure (Baik et al., 2011; Bochkay et al., 2019; Cao et al., 2019; Hasan, 2020), tax avoidance strategies (Francis et al., 2013; Khurana et al., 2018; Koester et al., 2017), and investment efficiency (Gan, 2019). These studies generally conclude that more talented managers are expected to identify technology and industry trends better, estimate market demand more accurately, invest in higher-profit projects, and manage employees more effectively than their less talented counterparts.

According to the upper echelons theory, firms' outcomes, performance, and strategic decisions are partly determined by managerial background characteristics (Hambrick, 2007; Hambrick and Mason, 1984). The theory implies that managers' individual characteristics affect firms' decision outcomes. In disclosure literature, studies have shown significant manager fixed effects on corporate voluntary disclosure strategies (Baik et al., 2011; Bamber et al., 2010; Bochkay et al., 2019; Cao et al., 2019; Hasan, 2020). Researchers have generally argued that managers with heterogeneous abilities make different corporate disclosure decisions and generate different outcomes. Trueman (1986)'s theory shows that talented managers have incentives to provide voluntary earnings forecasts to reveal their abilities and improve corporate market value. Later, Baik et al. (2011) provide empirical evidence that the likelihood and frequency of management earnings forecasts are positively related to CEO ability. However, Bochkay et al. (2019) find that CEOs' tenure is negatively associated with corporate forward-looking disclosure and disclosure tone. They argue that the reduction of managerial ability uncertainty for investors decreases the demand for additional information and managerial career concerns, therefore, resulting in decreased forward-looking disclosure. Prior studies investigating the impacts of managerial ability on

voluntary disclosure mainly focus on financial disclosure (e.g., management forecast). However, based on the upper echelons theory, managerial ability is expected to influence other types of information disclosure such as strategic information disclosure. To the best of my knowledge, there is no research that analyse the role of managerial ability in corporate strategic information disclosure decisions. Therefore, in this chapter, I fill this research gap by exploring how managerial ability affect strategic information disclosure.

Based on a sample of US non-financial firms included in the S&P 500 index during the period from 2009 to 2018, this study investigates the impacts of managerial ability on strategic information disclosure. The results suggest that companies with high-ability managers are associated with a lower level of strategic information disclosure. The potential economic interpretation of this negative relationship is that stakeholders' uncertainty regarding firms' performance and future prospects increases their information needs for companies and managers' career concerns, thus resulting in increased managerial incentives to provide additional information; however, a firm with a high-ability manager is associated with less stakeholders' uncertainty about the firm's future, thus resulting in decreased outsiders' demand for additional information and manager's career concerns (Bochkay et al., 2019). Moreover, given the existence of the proprietary costs, high-ability managers may have less incentive to disclose strategic information (Bhojraj et al., 2004; Lu and Tucker, 2012). To verify my main findings, this study conducts a series of robustness analyses, including the Granger causality test, alternative proxies for managerial ability (Historical ROA), and additional controls (Firm age, Executive age, and Compensation). The results of all robustness analyses support my previous conclusion.

In order to complement the main analysis in this study and deeply investigate how managerial ability heterogeneity affects companies' strategic information disclosure behaviour, this study conducts several additional analyses on strategic information disclosure. First, I investigate the disclosure tone changes of strategic information. I

apply Loughran and McDonald (2011) s' dictionary of negative and positive words to evaluate strategic information extracted from all transcripts of my sample firms. The findings suggest that there is an increase in the positive tone of strategic information disclosure when companies led by high-ability managers. Second, I explore the effects of managerial ability on various categories of strategic information disclosure. The results show that companies with high-ability managers tend to reduce the level of all categories of strategic information except for moving-related strategic information. The results support my main finding that more able managers have less incentive to disclose strategic information.

This study provides the following contributions to the existing literature. First, this study provides new evidence to the disclosure literature on the role of managerial ability heterogeneity. This study enriches the literature on the determinants of strategic information disclosure. Second, this study contributes to literature by providing new evidence of the consequences of managerial ability heterogeneity. Previous studies exploring the impacts of managerial ability mainly focus on financial disclosure such as management forecasts and accruals quality (e.g., Baik et al., 2011; Cao et al., 2019; De Franco et al., 2017; Demerjian et al., 2013). There is no study examining the relation between managerial ability and corporate strategic information disclosure decisions. This paper fills this gap by investigating the effect of managerial ability on the quantity and disclosure tone of strategic information.

The remainder of this chapter proceeds as follows. Section 4.2 reviews the literature and develops the hypotheses to be tested. Section 4.3 contains a description of my sample, variables, and research models. Section 4.4 provides a discussion of my main findings. Section 4.5 includes the summary of this chapter.

4.2 Related Managerial Ability Literature and Hypotheses Development

4.2.1 Managerial Ability Related Literature

4.2.1.1 Definition of Managerial Ability

Managerial ability, also termed as managerial skill, managerial quality, or managerial practices (Delis and Tsionas, 2017), plays an important role in governance, CEO compensation, board structure, and value creation (Delis et al., 2020). Holcomb et al. (2009) define managerial ability as,

"*the knowledge, skills, and experience, which is often tacit, residing with and utilized by managers*." (p. 459)

Managerial ability can be classified into three types: firm-specific, industry-specific, and general components. General ability refers to management use skills, knowledge, and experience to create value for a company. It has the greatest flexibility and is less unique to a given context. By contrast, firm-specific ability is least flexibility and exclusive to a context, while industry-specific ability is transferable to some extent due to its relevance to companies within the industry (Holcomb et al., 2009). They indicate that from a strategic view, managerial ability depends on two main sources: domain expertise and resource expertise. They define domain expertise and resource expertise as,

"*Domain expertise refers to managers' understanding of the industry context and the firm's strategies, products, markets, task environments, and routines … Resource expertise manifests through experience with resource management processes. Specifically, it represents the ability of managers to select and configure a firm's resource portfolio, bundle resources into distinctive combinations, and deploy them to exploit opportunities in specific contexts*." (p. 459–460)

Later, Demerjian et al. (2012, 2013) define managerial ability as managers' efficiency, relative to their industry counterparts, in generating revenues from corporate resources.

More talented managers are expected to identify technology and industry trends better, estimate market demand more accurately, invest in higher-profit projects, and manage employees more effectively. Similarly, Krishnan and Wang (2015) define managerial ability as the ability of managers relative to their industry counterparts in generating revenues and profits, and such ability is a highly desired trait.

Recently, based the management theory of Katz (1974),[17] Delis et al. (2020) broadly define management practices as,

"*there are three components of management: human resource management (the ability to interact, communicate, motivate, and negotiate), technical abilities (human capital, knowledge, and proficiency), and conceptual skills (understanding concepts, develop ideas, and implement strategies*)." (p. 1)

Delis et al. (2020) suggest that managers differ markedly in these practices within companies and across time. Specifically, management is a process of learning by doing. More able managers learn quickly and adapt to emerging challenges in a fast changing environment. Besides, the management team grows frequently (e.g., new members join the team and others leave). Therefore, this shapes managerial ability involves the three main components.

4.2.1.2 Economic Consequences of Managerial Ability

Existing studies have recognized that managers have heterogeneous abilities, and therefore significantly affect corporate level decision outcomes, such as risk-taking behaviour (Andreou et al., 2016; Curi and Lozano-Vivas, 2020; Pathan, 2009; Yung and Chen, 2018), voluntary disclosure (Baik et al., 2011; Bochkay et al., 2019; Cao et al., 2019; Hasan, 2020), tax avoidance strategies (Francis et al., 2013; Khurana et al., 2018; Koester et al., 2017), and investment efficiency (Gan, 2019). This section discusses existing empirical studies that investigate various consequences of managerial ability.

[17] Katz (1974) propose a three-skill approach to evaluate executives' ability from three aspects, including technical skill, human skill, and conceptual skill.

A summary of these studies can be found in Table 4.1.

Risk-taking behaviour

Risk-taking is crucial for companies to survive in the market. Managers believe that risk-taking is a vital component of the management role (March and Shapira, 1987), and have incentives to take risks in the chase of profitable chances (John et al., 2008). However, some researchers argue that well-educated or intelligent persons are more risk cautious in decision-making (Boholm, 1998; Culver et al., 2001).[18]

Empirical studies show that managers have different preferences for risk-taking due to heterogeneous abilities. Andreou et al. (2016) examine the effect of managerial ability on the US banks' risk-taking behaviour based on 100,976 bank-year observations from 1994 to 2010. They find that managers with higher ability take more risk. Similarly, Yung and Chen (2018) conduct a research investigating how managerial ability influences firm risk-taking behaviour based on 130,317 firm-year observations between 1980 and 2014 in the US market. They find that higher ability managers engaged in more risk-taking activities than lower ability managers. Specifically, higher ability managers tend to reduce capital expenditures but increase research and development expenses, however, lower ability managers cut both expenditures. On the contrary, studies provide opposite evidence on the association between managerial ability and corporate risk-taking behaviour in the US and EU market. Based on a sample of 212 US bank holding companies during the period from 1997 to 2004, Pathan (2009) suggest that CEO's ability to control board decision negatively influences bank risk-taking, suggesting that CEOs have reason to be risk-averse. Curi and Lozano-Vivas (2020) examine the indirect impact through franchise value and direct effect of managerial ability on banks' risk-taking. Based on a sample of listed banks from 15 EU countries during the period from 1997 to 2016, they indicate that more able managers tend to increase franchise value, reduce banks' risk-taking (indirect impact),

[18] Nuthall (2001) shows that managerial ability is positively associated with levels of education and intelligence.

particularly for small banks and during financial crisis. Additionally, managerial ability reduces the probability of default (direct impact).

Corporate innovation is an important form of firm risk-taking (Yung and Chen, 2018). The recent US-based research provides mixed evidence on the relationship between managerial ability and corporate innovation. Chen et al. (2015) indicate that managerial ability is positively related to corporate innovative output. Moreover, the equity market responds more positively to patents produced by high-ability managers. Custódio et al. (2019) examine the impact of general managerial skills on corporate innovation activities. They find that companies with CEOs who gain general managerial skills based on their past working experience generate more patents. Later, Lin et al. (2021) examine the value of managerial ability and general ability for inventor CEOs. CEO general ability captures a manager's general ability over their lifetime of working experience. It has the greatest flexibility and is less unique to a given context (Holcomb et al., 2009). By contrast, managerial ability focus on the efficiency in maximising profits (Demerjian et al., 2012, 2013). Their results show that inventor CEOs with high general ability participate in more innovation activities, while inventor CEOs with high managerial ability engage in less corporate innovation.

Also addressing this issue of corporate risk-taking behaviour, several studies empirically examine the association between managerial ability and corporate investment decisions. Andreou et al. (2017) investigates the impact of managerial ability on crisis-period corporate investment based on a sample of 2,748 US firms in 2008. Their results indicate that the scale of corporate investment increased with managerial ability during the crisis period, because such companies tend to gain greater financing and mitigate underinvestment problems. Moreover, the equity market positively values the investment of companies with high pre-crisis managerial ability during the crisis period. Using a sample of US companies over 1994-2015, Khurana et al. (2018) explore the impact of managerial ability on the association between corporate

tax avoidance and investment efficiency. Their findings show that the investment efficiency of companies with higher managerial ability increases with tax avoidance. Similarly, Gan (2019) provides US based evidence that high-ability CEOs leads to more efficient investment decisions.

Firm performance

Hayes and Schaefer (1999) investigate abnormal returns associated with departure of managers. Using a sample of 287 US firms between 1979 and 1994, they show that the events of managers quit for a new job result in firms' negative abnormal returns, and the events of managers' sudden deaths lead to firms' positive abnormal returns. Their results suggest that departure of a high-ability manager negatively affects the firms' abnormal return. Similarly, Chang et al. (2010) examine 298 CEO moves and 44 CEO death events for the period from 1992 to 2002. Their findings indicate that the financial market reaction upon the CEO leave negatively associated with the company's past performance and with the CEO's prior compensation. Furthermore, better past performance of the firm losing the CEO, higher prior compensation, and a more negative stock market response of departure news lead to greater subsequent labor market success of the CEO and worse performance of the firm losing the CEO. Demerjian et al. (2012) develop a new measure of managerial ability, and provide new evidence to support the negative reactions of stock price to the turnovers of high-ability CEOs. They also find that replacing the CEO with a more capable CEO improves the company's subsequent performance. Andreou et al. (2013) examine the association between managerial ability and firm performance during the 2008 global financial crisis. Based on a sample of 2344 US companies over 2008-2011, they conclude that managerial ability improves firm performance, reduces underinvestment, increases profitability/borrowing capacity and mitigates information asymmetry.

In contrast, Mishra (2014) conducts a study on the dark side of CEO ability. Employing a sample of 12,431 firm-years of S&P 1500 firms over 1993-2006, Mishra (2014)

investigates the impact of CEO general managerial skills on corporate cost of equity capital, showing that CEOs with higher general managerial skills positively associated with a company's implied cost of equity. CEOs with high general managerial skills represent a higher share of organization capital, have higher incentives to take risks and are subject to higher agency problems than specialist CEOs, consequently, investors tend to require higher returns.

Corporate disclosure

Researchers have generally argued that managers with heterogeneous abilities made different corporate disclosure decisions and generate different outcomes. Demerjian et al. (2013) analyse the association between managerial ability and financial reporting disclosure quality by employing a large US sample of 78,423 firm-year observations during the period from 1989 to 2009. Their results indicate that companies with high-ability managers are associated with fewer subsequent restatements, and higher quality accrual estimations. By contrast, based on a US sample of 50,058 firm-year observations over 2000-2012, Gul et al. (2018) suggest that more able managers in distressed companies are associated with lower accrual quality and a higher probability of restatement. In the context of China, Wang et al. (2017) show that there is a negative association between managerial ability and the likelihood of financial statement fraud, however, the relationship is weaker for companies with political connections. They also show that companies with high-ability managers experience less severe penalties by the regulatory agencies

In addition to financial reporting quality, studies also examine the likelihood, frequency and tone of financial disclosure. Baik et al. (2011) investigate the influence of CEO ability on management earnings forecasts based on a sample of 14,315 firm-year observations over 1995-2005. Their findings show that the probability and frequency of management earnings forecasts are positively associated with CEO ability. The results support Trueman's (1986) theory that more able managers tend to signal their

ability to anticipate changes in their firm's prospects. Moreover, they find that high-ability CEOs increase forecast accuracy and result in positive stock market reactions to the disclosure. Addressing the issue of changes in CEOs' disclosure styles over their tenure, Bochkay et al. (2019) investigate the relationship between uncertainty about managers' ability and CEOs' disclosure decisions. They find that CEOs' tenure negatively associated with corporate forward-looking disclosure and disclosure tone. Their results suggest that managerial ability uncertainty increases the demand for additional information and managerial career concerns, and therefore, resulting in increased forward-looking disclosure and positive disclosure tone.

In order to analyse the quality of firms' broader information environment, Baik et al. (2018) investigate the association between managerial ability and the quality of a firm's information environment based on a US sample of 15,207 firm-year observations over 1993-2010. Using a composite index based on four information environment proxies (trading volume, bid-ask spread, analyst following, and analyst forecast errors), they show that high-ability managers improve companies' information environment quality. Addressing the issue of the readability of narrative disclosures in 10-K filings, Hasan (2020) examines the effect of managerial ability on the readability of narrative disclosures in 10-K filings based on a US sample over 1994-2015. Their findings indicate that companies with high-ability managers are correlated with the improved readability of corporate disclosures.

Tax strategies

Tax avoidance provides economic benefits to companies, however, it also consumes valuable resources. Based on the competing arguments, several studies analyse how individual executive characteristics influence corporate tax avoidance. Francis et al. (2013) investigate the impact of managerial ability on corporate tax avoidance based on a sample of 42,340 firm-year observations for 7,001 US companies over 1988-2009. They find that there is a negative relationship between managerial ability and corporate

tax avoidance. By contrast, using a large US sample for the period 1994-2010, Koester et al. (2017) find that more able managers are correlated with greater tax avoidance activities. Khurana et al. (2018) analyse the impact of managerial ability on the association between corporate tax avoidance and investment efficiency. Based on a US sample of 17,742 firm-year observations over 1994-2015, the authors find that the investment efficiency of high-ability managers improves as tax avoidance increases.

In contrast to above studies that investigate corporate tax, Guan et al. (2018) explore shareholder tax. Using a US sample of 36,874 firm-year observations during the period from 1987 to 2011, their findings indicate that there is a positive association between managerial ability and the shareholder tax sensitivity of dividends, however, such relationship lessened by institutional investors.

Resource management

I identify two empirical studies examining the importance of managerial ability in the resource-value creation. Based on a sample of NFL sports team from the 1980 season to 2000 season, Holcomb et al. (2009) find that managerial ability is positively related to resource productivity, however, such relationship is limited by the increased quality of firm resources. Using a US sample of 5,347 firm-year observations between 1993 and 2014, Cao et al. (2019) explore the influence of managerial ability, in connection with their forecasting ability, on the open-market repurchase (OMR) program completion. Their results show that managerial ability positively influences the completion rates of OMR programs, this effect is enhanced by increased management earnings forecasts accuracy. By contrast, uncertainty about future cash flows and smaller rent extraction possibility enhance the positive relationship between managerial ability and the completion rates of OMR program. Their findings imply that the repurchase completion rate represents managerial ability to predict and accommodate uncertain cash flows during the repurchase period.

Audit fees

There is little empirical research on whether managerial ability is informative to auditors. I identify three studies examining the impact of individual executive characteristics on auditors' decisions based on the US market. Using a large sample over 2000-2011, Krishnan and Wang (2015) provide empirical evidence that companies with high-ability managers are associated with lower audit fees. In terms of going concern opinions, their results show that there is a negative association between managerial ability and the probability of auditors issuing a going concern opinion. Their finds suggest that more able managers reduce the auditor's engagement risk. Later, employing a larger scale of sample over 2000-2012, Gul et al. (2018) investigate the impact of managerial ability on audit fees in the context of financial distress. They show that there is a positive association between managerial ability and audit fee for companies with a higher level of financial distress. They argue that in order to maximize equity compensation and cope with debt refinancing pressures, distressed companies with more talented managers tend to engage in opportunistic financial reporting, consequently, leading to increased audit risks and audit fees. Mitra et al. (2019) analyse the role of managerial ability in the association between managerial overconfidence and audit fees. They suggest that managerial overconfidence is associated with higher financial misstatement risks, thus, resulting in higher audit fees. However, the positive association between managerial overconfidence and audit fees is mitigate by high-ability managers.

Credit rating

Given the importance of understanding the factors that debt market participants consider in evaluating default risk, researchers have empirically examined the association between managerial ability and credit risk assessment. Based on 26,235 US bond data over 2001-2014, Chen et al. (2017) find that companies' credit quality increased with CEO ability. Furthermore, good macroeconomic conditions and board's recruiting ability both limit the effect of CEO ability heterogeneity on bond yield

spreads. Similarly, Bonsall IV et al. (2017) provide evidence to support the positive association between managerial ability and credit ratings by using a US sample of 68,517 observations from 1980 to 2010. According to Cornaggia et al. (2017), the positive impact of managerial ability on credit ratings implies that managerial ability itself is an important credit rating factor. High-ability managers tend to take effective actions to improve their credit ratings (Harper et al., 2019). In a recent study, Khoo and Cheung (2021) examine the association between managerial ability and trade credit by employing a US sample of 124,282 firm-year observations over 1981-2016, their results show that companies with poorer credit quality or a higher level of financial constraints, led by more talented managers, tend to receive more trade credit.

Corporate debt

Petkevich and Prevost (2018) analyse the impact of managerial ability on the design and pricing of corporate debt. Based on a US sample of 35,840 observations from 1994 to 2013, their results indicate that bond market participants' assessment of information risk is moderated by high-ability managers; high-ability managers increase the value of information-sensitive debt through reducing the liquidity and default risk premia required by investors. Recently, Shang (2021) explores the effect of managerial ability on corporate debt maturity decisions by using a sample of 99,821 firm-year observations over 1985-2018. Their results show that managers with higher ability are likely to use a larger proportion of short-term debt in corporate debt maturity structures; this positive relationship is enhanced by companies' growth opportunities and moderated by companies' refinancing risk.

Bank loan contracting

Managerial ability is a significant factor in banks' lending decisions, because lenders believe that poor management skill results in loan default (Equinox, 2001). Based on a sample of 15,346 US bank loans over 1990-2008, De Franco et al. (2017) examine how managerial ability influences bank-loan pricing. They find a negative relation between

managerial ability and bank-loan price. This negative association is less pronounced in firms with low information risk, suggesting that more able managers tend to moderate information problems by increased financial information disclosure, and thus, influence bank-loan contracting. Moreover, the negative effect is also moderated by improved business performance. Later, Bui et al. (2018) investigate the impacts of managerial ability versus luck on bank loan contracting. Employing 4,397 US firms over 1988-2010, their findings indicate that banks can differentiate between luck and ability when they made lending decisions. Specifically, more able managers are associated with decreased bank loan spread. This relation is enhanced by managers with consistent high-ability throughout the previous years, by contrast, managers with high-ability only in the most recent year out of previous years do not enjoy any spread reduction.

Earnings management

Several studies investigate the role of managerial ability in earnings management. Based on a US sample of 69,429 firm-year observations over 1987-2012, Huang and Sun (2017) explore the association between managerial ability and real earnings management. Their findings indicate that high-ability managers are associated less real earnings management activities. In additional, the negative effect of real earnings management on firm performance is less pronounced in companies with more talented managers. In the context of Japan, Oskouei et al. (2021) investigate how managerial ability relates to real earnings management conditional on economic and financial crisis. Based on a sample of 1,872 years-firms over 2012-2017, the authors show that more able managers engage in less real earnings management. Moreover, this negative influence increases during economic crisis.

Addressing the issue of earnings smoothing, Demerjian et al. (2020) examine how does earnings smoothing change with managerial ability based on a US sample of 13,153 firm-year observations over 1995-2013. They find a positive association between managerial ability and intentional smoothing activities. Furthermore, more able

managers engage in intentional smoothing activities when they benefit all shareholders, therefore enhancing their reputation.

Others

In addition to the consequences mentioned above, researchers are also interested in other economic consequences of managerial capacity, such as evaluation of competitor behaviour, goodwill impairment, corporate social responsibility (CSR) performance, and growth options value. Goldfarb and Xiao (2011) examine the relation between managerial ability and strategic entry based on US local telephones markets. There results show that managers with more experience and better education tend to enter market with a lower competition level. Employing a US sample of 30,426 firm-year observations from 2002 to 2011, Sun (2016) investigate how managerial ability influences goodwill impairment. They find a negative association between managerial ability and goodwill impairment, indicating that high-ability managers better prevent goodwill impairment. John et al. (2017) conduct a study on film directors' success. Based on 68 directors during 1985-2012, their results indicate that the possibility of re-hiring is higher for film directors with more completed projects. Moreover, studios tend to provide larger budgets to high-ability directors. In terms of other industries, studies also provide evidence that more talented managers relate to higher compensation levels (Chang et al., 2010; Song and Wan, 2019). Furthermore, studies show that managerial ability is positively correlated with CSR performance (Yuan et al., 2019), growth option value (Driouchi et al., 2021), and likelihood of completing cross-border mergers and acquisitions (Xu et al., 2021).

4.2.1.3 Measurements of Managerial Ability

Managerial ability is not directly observable, and thus it is difficult to accurately measure it. Given the importance of studying managerial ability, researchers try to develop various methods to quantify it. This section reviews main approaches to measuring managerial ability in empirical studies. A summary of these studies can be

found in Table 4.1.

Residual-based measure

Proxies of managerial ability such as abnormal returns, compensation, tenure, media citations, and manager fixed effects, are noisy in general. For example, abnormal returns can be affected by other market factors; media citations are more common for large companies (Yung and Chen, 2018); proxy based on CEO fixed effects is available only for small sample (Demerjian et al., 2012). Accordingly, Demerjian et al. (2012) develop a new measure of managerial ability, based on managers' efficiency in generating revenues. This measurement captures managers' ability to convert resource into outputs, which is extensively employed in subsequent studies (e.g., Andreou et al., 2013; Andreou et al., 2017; Baik et al., 2018; Baik et al., 2011; Bonsall IV et al., 2017; Bui et al., 2018; Cao et al., 2019; Chen et al., 2015; Cornaggia et al., 2017; Curi and Lozano-Vivas, 2020; De Franco et al., 2017; Demerjian et al., 2020; Demerjian et al., 2013; Driouchi et al., 2021; Francis et al., 2013; Gan, 2019; Guan et al., 2018; Gul et al., 2018; Harper et al., 2019; Hasan, 2020; Huang and Sun, 2017; Khoo and Cheung, 2021; Khurana et al., 2018; Koester et al., 2017; Krishnan and Wang, 2015; Lin et al., 2021; Mitra et al., 2019; Oskouei et al., 2021; Petkevich and Prevost, 2018; Shang, 2021; Sun, 2016; Wang et al., 2017; Xu et al., 2021; Yung and Chen, 2018).

Managerial ability measure of Demerjian et al. (2012), based on the notion that high-ability managers should better at generating revenues from corporate resource. This managerial ability measure consists of two steps. First, the authors employ data envelopment analysis (DEA) methodology to generate a proxy of firm efficiency within its industry, comparing the revenue generated by each company, conditional on the corporate inputs (net property, plant, and equipment; net operating leases; net R&D; purchased goodwill; other intangible assets; cost of inventory; and selling, general, and administrative expenses). The authors suggest that firm efficiency could be employed to measure managerial ability, however, it attributes to both firm-specific and manager-

Table 4. 1 Summary of empirical papers (measures and economic consequences of managerial ability)

Year	Author & Journal	Study name	Market	Sample	Measures	Economic consequences
2009	Pathan (Journal of Banking & Finance)	Strong boards, CEO power and bank risk-taking	US	1,534 observations over 1997-2004	A dummy variable is used to capture CEO's ability to control board decision. A dummy variable equals one if CEO is also the board chair and if internally-hired, otherwise zero.	Risk-taking behaviour
2015	Chen et al. (Journal of empirical finance)	Does managerial ability facilitate corporate innovative success?	US	4,2754 firm-year observations over 1993-2006	1. Residual-based measure. 2. An indicator variable equal to one if the CEO is recognized as one of the "top" CEOs in calendar year t. 3. Media citations.	
2016	Andreou et al. (Journal of Business Finance & Accounting)	Bank liquidity creation and risk-taking: Does managerial ability matter?	US	100,976 bank-year observations from 1994 to 2010	Two steps: 1. SFA profit efficiency scores 2. Residual-based measure.	
2017	Andreou et al. (Journal of Business Research)	The impact of managerial ability on crisis–period corporate investment	US	2,748 firms in 2008	Residual-based measure.	
2018	Yung et al. (Review of Quantitative Finance and Accounting)	Managerial ability and firm risk-taking behaviour	US	130,317 firm-year observations between 1980 and 2014	Residual-based measure.	
2019	Custódio et al. (2019; Management Science)	Do general managerial skills spur innovation	US	S&P 1500 firms over 1993-2003	GAI score of Custódio et al. (2013)	
2019	Gan (2019; Review of Quantitative Finance and Accounting)	Does CEO managerial ability matter? Evidence from corporate investment efficiency	US	20,323 firm-year observations from 1991 to 2013	Residual-based measure.	
2020	Curi et al. (2020; Journal of Economic Behaviour and Organization)	Managerial ability as a tool for prudential regulation	EU	1,148 firm-year observations from 1997 to 2016	Residual-based measure.	
2021	Lin et al. (2021; Journal of Business Research)	The value of managerial ability and general ability for inventor CEOs	US	18,229 firm-year observations from 1992 to 2008	1. CEO general ability: GAI score of Custódio et al. (2013) 2. Managerial ability: Residual-based measure.	
1999	Hayes et al. (Journal of Accounting and Economics)	How much are differences in managerial ability worth?	US	287 firms between 1979 and 1994	They use abnormal returns associated with manager/firm separations to construct a measure of the value of differences in managerial ability.	Firm performance
2010	Chang et al. (Management Science)	CEO ability, pay, and firm performance	US	298 CEO moves and 44 CEO death events over 1992 to 2002	1. CEO relative pay and prior firm performance-variables that potentially correlate with CEO ability. 2. The residual from the cumulative abnormal return (CAR) regression as an additional measure of CEO ability.	
2012	Demerjian et al. (Management science)	Quantifying managerial ability: A new measure and validity tests.	US	177,134 firm-year observations from 1980 to 2009	Two new measures: 1. Residual-based measure. 2. Regress firm efficiency on CEO fixed effects Five measures used for comparison with the two new measures:	

					3. Historical industry-adjusted stock returns 4. Historical industry-adjusted ROA 5. CEO compensation 6. CEO tenure 7. Media mentions	
2013	Andreou et al. (European Financial Management Association, Annual Conference)	Managerial Ability and Firm Performance: Evidence from the Global Financial Crisis	US	2,344 firms over 2008-2011	Residual-based measure and historical returns.	
2014	Mishra (Journal of Corporate Finance)	The dark side of CEO ability: CEO general managerial skills and cost of equity capital	US	12,431 firm-years of S&P 1500 companies over 1993-2006	GAI score	
2011	Baik et al. (Contemporary Accounting Research)	CEO ability and management earnings forecasts	US	14,315 firm-year observations over 1995-2005	1. Media citations 2. Residual-based measure 3. Industry-adjusted return on asset	Corporate disclosure
2013	Demerjian et al. (Accounting review)	Managerial ability and earnings quality	US	78,423 firm-year observations during the period from 1989 to 2009	1. Residual-based measure 2. Media citations 3. Historical stock returns 4. Manager fixed effects	
2017	Wang et al. (Journal of Accounting and Public Policy)	Managerial ability, political connections, and fraudulent financial reporting in China.	China	5,514 observations from 2007-2012	1. Residual-based measure 2. Historical industry-adjusted stock returns 3. Historical industry-adjusted ROA 4. CEO cash compensation 5. CEO tenure 6. Overall firm efficiency measure 7. Firm size	
2018	Baik et al. (Journal of Accounting, Auditing & Finance)	Managerial ability and the quality of firms' information environment	US	15,207 firm-year observations over 1993-2010	1. Residual-based measure 2. Industry-adjusted ROA 3. Media citations	
2018	Gul et al. (Accounting Horizons)	Managerial ability, financial distress, and audit fees	US	50,058 firm-year observations from 2000 to 2012	Residual-based measure	
2019	Bochkay et al. (Accounting Review)	Dynamics of CEO disclosure style	US	41,776 observations for the years 2006-2014	CEO tenure	
2020	Hasan (European Accounting Review)	Readability of narrative disclosures in 10–K reports: Does managerial ability matter?	US	56,568 observations from 1994 to 2015	1. Residual-based measure 2. Industry-adjusted stock returns	
2013	Francis et al. (Working paper)	Managerial ability and tax avoidance	US	42,340 firm-year observations for 7,001 unique firms for the period 1988-2009	Residual-based measure	Tax strategies
2017	Koester et al. (Management Science)	The role of managerial ability in corporate tax avoidance	US	44,616 firm-year observations from 1994-2010	Residual-based measure.	

2018	Guan et al. (Journal of Financial and Quantitative Analysis)	Managerial ability and the shareholder tax sensitivity of dividends	US	36,874 firm-year observations from 1987 to 2011	Residual-based measure.	
2018	Khurana et al. (Abacus)	Tax avoidance, managerial ability, and investment efficiency	US	17,742 firm-year observations from 1994-2015	Residual-based measure	
2009	Holcomb et al (Strategic Management Journal)	Making the most of what you have: Managerial ability as a source of resource value creation	US	602 individual team-year observations from 1980 to 2000	1. The weighted career winning percentage for each manager for each team-year observation. 2. Analysing dimensions that proxy the accumulation of managerial knowledge and skills.	Resource management
2019	Cao et al. (Review of Quantitative Finance and Accounting)	Managerial ability, forecasting quality, and open-market repurchase program completion	US	5,347 firm-year observations from 1993 to 2014	1. Residual-based measure 2. Industry-adjusted ROA	
2015	Krishnan et al. (Auditing: A Journal of Practice & Theory)	The relation between managerial ability and audit fees and going concern opinions.	US	31,000 firm-year observations from 2000 to 2011	Residual-based measure	Audit fees
2019	Mitra et al. (Review of Quantitative Finance and Accounting)	Managerial overconfidence, ability, firm-governance and audit fees	US	12,942 firm observations from 2003 to 2011	Residual-based measure.	
2017	Bonsall IV et al. (Management Science)	Managerial ability and credit risk assessment	US	68,517 observations, from 1980 to 2010	Residual-based measure.	Credit rating
2017	Chen et al. (Review of Quantitative Finance and Accounting)	CEO ability heterogeneity, board's recruiting ability and credit risk	US	26,235 annual bond observations from the year 2001 to 2014	Industry-adjusted average ROA	
2017	Cornaggia et al. (Contemporary Accounting Research)	Managerial ability and credit ratings	US	25,113 firm-year observations from 1987 to 2013	Residual-based measure	
2019	Harper et al. (Financial Markets, Institutions & Instruments)	Managerial ability and bond rating changes	US	16,917 firm-year observations from 1989 to 2016	Residual-based measure.	
2021	Khoo et al. (Financial Review)	Managerial ability and trade credit	US	124,282 firm-year observations between 1981 and 2016	Residual-based measure	
2018	Petkevich et al (Review of Quantitative Finance and Accounting)	Managerial ability, information quality, and the design and pricing of corporate debt	US	35,840 observations over 1994-2013	Residual-based measure.	Corporate debt
2021	Shang (Journal of Corporate Finance)	Dare to play with fire? Managerial ability and the use of short-term debt	US	99,821 firm-year observations from 1985 to 2018	Residual-based measure.	
2017	De Franco et al. (Journal of Business Finance & Accounting)	Managerial ability and bank-loan pricing	US	15,346 bank loan facilities between 1990 and 2008	1. Residual-based measure 2. Industry-adjusted return on assets 3. CEO's total compensation	Bank loan contracting
2018	Bui et al. (Journal of Banking and Finance)	Can lenders discern managerial ability from luck? Evidence from bank loan contracts	US	4,397 sample firms from 1988 to 2010	Residual-based measure.	

2017	Huang et al. (Advances in Accounting)	Managerial ability and real earnings management	US	69,429 firm-year observations during the period from 1987 to 2012	1. Residual-based measure 2. CEO tenure	Earnings management
2020	Demerjian et al. (Journal of Accounting, Auditing & Finance)	How does intentional earnings smoothing vary with managerial ability?	US	13,153 firm-year observations from 1995 to 2013	Residual-based measure	
2021	Oskouei et al. (International Journal of Finance & Economic)	Studying the relationship between managerial ability and real earnings management in economic and financial crisis conditions	Japan	1,872 years-firms during 2012-2017	Residual-based measure.	
2011	Goldfarb et al (American Economic Review)	Who thinks about the competition? Managerial ability and strategic entry in US local telephone markets.	US	CLECs in 1998 and 2002	Manager characteristics, including industry experience and education.	Strategic entry
2016	Sun, L. (Advances in accounting)	Managerial ability and goodwill impairment	US	30,426 firm-year observations from 2002 to 2011	Residual-based measure	Goodwill impairment
2017	John et al. (Journal of Corporate Finance)	Managerial ability and success: Evidence from the career paths of film directors	US	68 directors over 1985-2012	1. Total Career Length 2. Individual director fixed effects	Re-hiring
2019	Song et al. (Journal of Corporate Finance)	Does CEO compensation reflect managerial ability or managerial power? Evidence from the compensation of powerful CEOs	US	S&P 500 firms between 1993 and 2012	A power index consists of CEO duality, the concentration of the CEO's titles, and CEO's founder status.	Compensation
2019	Yuan et al. (Journal of Business Ethics)	CEO ability and corporate social responsibility	US	19,331 firm-year observations from 2003 to 2012	Residual-based measure.	CSR performance
2021	Driouchi et al. (British Journal of Management)	Ambiguity, managerial ability, and growth options	US	All US-listed firms over the period 1983-2013	1. Residual-based measure. 2. Business strategy index of Bentley, Omer and Sharp (2013) 3. The innovation score of Kogan et al. (2017)	Growth options value
2021	Xu et al. (Journal of Asian Economics)	Does managerial ability matter for cross-border M&As: Evidence from Chinese listed firms	China	749 deals from 2003 to 2018	Residual-based measure.	Cross-border M&As

specific factors. Second, they remove firm-specific factors from total firm efficiency, including firm size, market share, positive free cash flow, and firm age, by regressing a Tobit model. The residual from the Tobit regression is the proxy of managerial ability (MA Score). Later, Demerjian et al. (2013) generate the decile rank (by industry and year) of the MA Score as an alternative measure of managerial ability.

Firm performance

Two proxies of managerial ability, industry-adjusted stock return and industry-adjusted return on asset, are performance-based. The two proxies are broadly employed in research to evaluate managers' ability (e.g., Andreou et al., 2013; Baik et al., 2018; Baik et al., 2011; Cao et al., 2019; Chen et al., 2017; De Franco et al., 2017; Demerjian et al., 2012; Demerjian et al., 2013; Hasan, 2020; Wang et al., 2017). According to Fee and Hadlock (2003), internal rewards in companies tend to reward managers based on corporate stock performance by stock options. In addition, the labour market is likely to consider this data as an indicator of managerial ability. In terms of industry-adjusted return on asset, Rajgopal et al. (2006) indicate that higher industry-adjusted return on asset implies that the CEO outperformed the industry. They also argue that industry-adjusted return on asset is a good measure of CEO talent. Similarly, Cao et al. (2019) suggest that industry-adjusted return on asset represents a broad measure of managerial ability.

CEO tenure

Milbourn (2003) show that the longer CEOs' tenure implies the better assessments of their ability by the board of directors, because they have survived from previous retention/dismissal decisions. Moreover, market participants can learn managers' ability from previous retention/dismissal decisions. Subsequently, research largely uses CEO tenure to proxy CEOs' ability (e.g., Bochkay et al., 2019; Demerjian et al., 2012; Huang and Sun, 2017; Wang et al., 2017).

Media citations

Researchers mainly employ media citations to measure managerial ability (e.g., Baik et al., 2018; Chen et al., 2015; Demerjian et al., 2012, 2013). The economic interpretation of media citations is that more able managers tend to be featured in the media, as the media prefer managers who are perceived as the industry experts (Milbourn, 2003). However, using media citations to measure managerial ability generates limitations. For instance, there is also bad news of executives; media citations are more common for large companies (Milbourn, 2003; Yung and Chen, 2018).

GAI score

Custódio et al. (2013) generate a CEO general ability index (GAI), which measures a CEO's general ability based on their lifetime working experience in publicly listed companies. Later, Mishra (2014), Custódio et al. (2019), and Lin et al. (2021) also employ the GAI score to measure general managerial skills. The GAI score of a CEO is estimated as follow:

$$GAI_{i,t} = 0.268X1_{i,t} + 0.312X2_{i,t} + 0.309X3_{i,t} + 0.218X4_{i,t} + 0.153X5_{i,t} \quad \text{(eq. 4.1)}$$

where X1 is the number of different positions that a CEO held, X2 is the number of firms a CEO worked, X3 is the number of different industries the CEO worked, X4 is a binary variable that takes a value of one if the CEO held the same position at another company, and X5 is a binary variable that takes a value of one if the CEO worked for a multidivisional company. Custódio et al. (2013) show that a high GAI of a CEO means that the CEO has the greater general ability.

4.2.2 Managerial Ability and Disclosure (Hypotheses Development)

The upper echelons theory states that firms' outcomes, performance, and strategic decisions, are partly determined by managerial background characteristics (Hambrick, 2007; Hambrick and Mason, 1984). In other words, managers' individual characteristics affect corporate-level decision outcomes. In disclosure literature, studies have shown

significant manager fixed effects on corporate voluntary disclosure strategies (e.g., Baik et al., 2011; Bamber et al., 2010; Bochkay et al., 2019; Cao et al., 2019; Hasan, 2020). Researchers have generally argued that managers with heterogeneous abilities made different corporate disclosure decisions and generate different outcomes.

Trueman (1986) theorizes that more talented managers are motivated to provide voluntary earnings forecasts to reveal their abilities and improve corporate market value. A company's market value implies investors' assessment of managers' ability to predict and respond to future changes in the firm's economic environment. Consequently, it is important for managers to inform investors that they have identified such changes, as investors' positive assessment of their capabilities increases firm value and the manager's equity wealth. Later, Healy and Palepu (2001) document that there is no empirical evidence to either support or refute this theoretical prediction. Recently, several empirical studies examine the association between managerial ability and the likelihood of corporate voluntary disclosure and provide mixed results.

Using a US sample of 14,315 firm-year observations over 1995-2005, Baik et al. (2011) investigate the effect of CEO ability on management earnings forecasts. They find that the probability and frequency of management earnings forecasts are positively related to CEO ability. The results provide the empirical evidence to support the theoretical prediction of Trueman (1986) that more able managers tend to signal their ability to predict changes in their firm's prospects. Furthermore, their results show that high-ability CEOs improve forecast accuracy and lead to positive stock market reactions to the disclosure. On the contrary, based on quarterly earnings conference calls over CEOs' tenure, Bochkay et al. (2019) investigate the relationship between uncertainty about managers' ability and CEOs' disclosure decisions. They find that CEOs' tenure negatively associated with corporate forward-looking disclosure and disclosure tone. Their results suggest that investors' uncertainty about managerial ability increases the demand for additional information and managerial career concerns, and therefore,

resulting in increased forward-looking disclosure and positive disclosure tone. However, investors' uncertainty about managers' ability decrease as CEO tenure increases, therefore, more able managers with a longer tenure are discouraged to disclose more forward-looking information due to the lower investors' uncertainty (less demand for additional information) and the proprietary costs.

Taken together, the above study provides mixed results. On the one hand, high-ability managers tend to signal their ability to predict future changes in their companies' economic environment through voluntary forward-looking disclosure. Hence, more able managers have incentives to release earnings forecasts to reveal their abilities and improve corporate market value. On the other hand, stakeholders' uncertainty regarding managerial ability, firms' performance, and future prospects increases the demand for additional information and managerial career concerns, consequently, young managers or managers with shorter tenure are encouraged to disclose forward-looking information with positive disclosure tone. Besides, more able managers with a longer tenure have less incentive to provide additional forward-looking information due to the proprietary costs. In sum, contrary evidence can be found in the literature on the association between managerial ability and forward-looking disclosure. Based on the upper echelons theory, managerial ability is expected to influence various types of information disclosure decisions such as strategic information disclosure. Therefore, given the forward-looking feature of strategic information disclosure, this study develops the following hypotheses:

H1a: High-ability managers are associated with increases in firms' strategic information disclosure.

H1b: High-ability managers are associated with decreases in firms' strategic information disclosure.

4.3 Sample Selection and Research Design

4.3.1 Sample and Data

This study sample is composed of the non-financial firms listed in the S&P 500 index over the period from 2009 to 2018. Based on the availability of relevant data for this study, the final sample includes 3,068 firm-year observations. The data for firms' strategic information disclosure is obtained from the Fair Disclosure Wire database accessed through Lexis Nexis. I manually collect the transcripts of all press releases, conference calls, and conference presentations (excluding briefs) for all non-financial companies included in the S&P 500 index from the Fair Disclosure Wire database. Furthermore, this study employs text analysis methodology to extract firms' strategic information disclosure from their transcripts based on the strategic indicator words list of Agapova and Volkov (2019). The data used to measure managerial ability derived from Compustat. The data used to calculate all control variables are obtained from CRSP/Compustat and Datastream. The definitions of all variables used in this study, and the data sources from which they are obtained are attached in Appendix 3.

4.3.2 Variables

4.3.2.1 Strategic Information Disclosure

This study applies textual analysis to identify the quantity of corporate strategic information disclosure. Unlike a number of studies that employ self-constructed disclosure index/criteria or other manual content analysis approaches to measure the quantity of information disclosure (see e.g., Eng and Mak, 2003; Gray et al., 1995; Gu and Li, 2007; Lu and Tucker, 2012; and Sánchez et al., 2011; Sieber et al., 2014), this study follows Agapova and Volkov (2019) and uses their strategic indicator words list to examine the level of strategic information disclosed in the releases of companies. The strategic indicator words list includes words and word patterns, which indicates the possible existence of strategic information disclosure. Compared with other studies that use the disclosure index or other manual content analysis approaches, computer-

assisted content analysis based on the strategic indicator words list allows this study to examine a large volume of textual data.

I manually collect the transcripts of all press releases, conference calls, and conference presentations (excluding briefs) for all non-financial companies included in the S&P 500 index over 2009-2018 from the Fair Disclosure Wire database accessed through Lexis Nexis. Following Agapova and Volkov (2019), based on the strategic indicator words list, the releases of companies contain strategic information are classified into seven categories: mergers and acquisition, research and development, consolidation, divestitures, cost control, move (offices, facilities), and growth (expansion). Next, this study develops a coding scheme to assign strategic information disclosure scores to each disclosure categories.[19] Specifically, it assigned by a score of 0 if the company makes no strategic information disclosure in any category of releases in a given year, 1 if the firm provides strategic information belonging to one of all categories mentioned above, 2 if the firm provides strategic information in two categories, and so on. As a result, the strategic information disclosure score for a company in a given year (SID7) is measured as the aggregate score obtained from each category in a given year divided by the maximum potential score (7) applicable to that company. The total score for each company ranges from 0 to 1.

[19] Agapova and Volkov (2019) measure strategic information disclosure as a binary variable that equals 1 if the company provides strategic information in a given quarter, and 0 otherwise. This study employs the same strategic word list but a new coding scheme. The underlying reason for doing this is that this study is based on yearly data rather than quarterly data. Quarterly data allow Agapova and Volkov (2019) to measure strategic information by a binary variable. However, in yearly data, over half of companies disclose strategic information. For example, if a company disclose strategic information in only one quarter of a year, then Agapova and Volkov (2019) consider the variable of strategic information as 1 for this quarter, and 0 for the other 3 quarters. However, this study considers the variable of strategic information as containing strategic information for the entire year even the company only discloses such information in one quarter. Therefore, I classify strategic information into seven categories and assign strategic information disclosure scores to each disclosure category. The variable of the strategic information disclosure score for a company in a given year is measured as the aggregate score obtained from each category in a given year divided by the maximum potential score (7) applicable to that company. This new coding scheme allows us to more comprehensively investigate the level of strategic information disclosed by a company based on yearly data.

4.3.2.2 Managerial Ability

The measure of managerial ability employed in this study was developed by Demerjian et al. (2012). This measure based on the notion that high-ability managers should better at generating revenues from firm resource. This study follows Demerjian et al. (2012), and uses data envelopment analysis (DEA) methodology to generate a proxy of firm efficiency within its industry, comparing the sales generated by each company, conditional on the firm's inputs (net property, plant, and equipment; net operating leases; net R&D; purchased goodwill; other intangible assets; cost of inventory; and selling, general, and administrative expenses). The DEA equation is as follows.

$$max_t Q = \frac{Sales}{t_1 COGS + t_2 XSGA + t_3 PPE + t_4 LEASE + t_5 R\&D + t_6 GOOD + t_7 Other} \quad \text{(eq. 4.2)}$$

where COGS is cost of goods sold; XSGA is selling and administrative expenses; PPE is net property, plant, and equipment; LEASE is net operating leases; R&D is net research and development; GOOD is purchased goodwill; and Other is other intangible assets. Demerjian et al. (2012) suggest that firm efficiency could be employed to measure managerial ability, however, it is affected by both firm-specific factors and management characteristics. Therefore, Demerjian et al. (2012) remove firm-specific factors from total firm efficiency, including firm size, market share, positive free cash flow, and firm age. I follow Demerjian et al. (2012), and run a Tobit regression by industry as follow:

$$\begin{aligned} Firm\ \ Efficiency_i &= \alpha_0 + \alpha_1 Ln(TotalAssets)_i + \alpha_2 Market\ \ Share_i \\ &+ \alpha_3 FreeCashFlow\ \ Indicator_i + \alpha_4 Ln(FirmAge)_i \\ &+ \alpha_5 Business\ \ Segment\ \ Concentration_i \\ &+ \alpha_6 Ln(Foreign\ \ Currency\ \ Indicator)_i \\ &+ \alpha_7 Year\ \ Indicator_i + \varepsilon_i \end{aligned} \quad \text{(eq. 4.3)}$$

The residual from the Tobit regression is the proxy of managerial ability (MA). In addition, I follow Demerjian et al. (2013) generate the decile rank (by industry and year)

of the MA as an alternative proxy of managerial ability (Rank).

4.3.2.3 Control Variables

This study controls for firm-specific and corporate governance factors. Following Gul and Leung (2004), I measure the variable of firm growth opportunities by market to book ratio (MTB). I also include the price to earnings ratio (PE) and R&D expenses scaled by total assets (R&D_Growth) as proxies for firm's growth opportunities. I control for firm size (Size), which is measured by the natural logarithm of a firm's total assets. I control for EBITDA/Sales (E/S), calculated as earnings before interest, taxes, depreciation, and amortization, divided by total sales. According to Agapova and Volkov (2019), companies facing higher levels of financial constraint have incentives to disclose more strategic information in order to mitigate information asymmetry and the cost of capital. Therefore, I control for financial constraint (Fin Cons). Following Baños-Caballero et al. (2014), companies with a dividend payout ratio (calculated as dividends/net profit) above the sample median are less financially constrained. Firms followed by more analysts are encouraged to release more additional information (Agapova and Volkov, 2019). Therefore, I control for the number of analysts following a firm in a year (Analyst). Following Agapova and Volkov (2019), I control Beta. This measure implies the systematic risk of the firm. Companies with more systematic risk have a higher cost of equity. In addition, I control for several corporate governance factors. BoardSize is the number of directors on the board of a company in a year. This is associated with a firm's control mechanism; thus, it affects corporate disclosure decisions (Sánchez et al., 2011). Meetings is the number of board meetings for a firm in a year. Sánchez et al. (2011) suggest that board activity, generally through board meetings, provides communication between the firm's directors and managers about the firm's operations and future plans. Consequently, the frequency of board meetings is expected to influence corporate strategic information disclosure decisions. I also control for board independence (Independence). Moreover, based on my previous study (chapter 3), corporate ownership structure and product market competition significantly

affect managers' strategic information disclosure, therefore, I control for managerial ownership (MOWN), blockholder ownership (BLOCK), and product market competition (FFR).

Finally, this study employs year fixed effects and industry fixed effects in the main analysis, robustness analysis, and addition analysis. Industry fixed effects are based on the two-digit SIC industry code. The definitions of all variables used in this study are provided in Appendix 3.

4.3.3 Empirical Models

The main objective of this study is to analyse how managerial ability influences strategic information disclosure decisions. Therefore, the models used in my regression analyses are as follow:

$$\begin{aligned} SID7_{it} = {} & \alpha + \beta_1 MA_{it} + \beta_2 BoardSize_{it} + \beta_3 Meetings_{it} \\ & + \beta_4 Independence_{it} + \beta_5 Analyst_{it} + \beta_6 PE_{it} \\ & + \beta_7 MTB_{it} + \beta_8 E/S_{it} + \beta_9 Fin\ \ Cons_{it} + \beta_{10} Size_{it} \\ & + \beta_{11}\text{R\&D\_}Growth_{it} + \beta_{12} MOWN_{it} + \beta_{13} BLOCK_{it} \\ & + \beta_{14} FFR_{it} + \beta_{15} Beta_{it} + \text{Year Dummies} \\ & + \text{Industry Dummies} + \varepsilon_{it} \end{aligned} \quad \text{(eq. 4.4)}$$

$$\begin{aligned} SID7_{it} = {} & \alpha + \beta_1 Rank_{it} + \beta_2 BoardSize_{it} + \beta_3 Meetings_{it} \\ & + \beta_4 Independence_{it} + \beta_5 Analyst_{it} + \beta_6 PE_{it} \\ & + \beta_7 MTB_{it} + \beta_8 E/S_{it} + \beta_9 Fin\ \ Cons_{it} + \beta_{10} Size_{it} \\ & + \beta_{11}\text{R\&D\_}Growth_{it} + \beta_{12} MOWN_{it} + \beta_{13} BLOCK_{it} \\ & + \beta_{14} FFR_{it} + \beta_{15} Beta_{it} + \text{Year Dummies} \\ & + \text{Industry Dummies} + \varepsilon_{it} \end{aligned} \quad \text{(eq. 4.5)}$$

where $SID7_{it}$ is the strategic information disclosure score for a firm i at year t. MA_{it} is a proxy for managerial ability for a firm i at year t. $Rank_{it}$ is decile rank of MA for a firm i at year t. $BoardSize_{it}$ represents the number of directors on the board for a firm i at year t. $Meetings_{it}$ measures the number of board meetings for a firm i at year t. $Independence_{it}$ measures the board independence for a firm i at year t. $Analyst_{it}$ is the number of analysts following for a firm i at year t. Three proxies for firm's growth opportunities are price to earnings ratio (PE_{it}), market to book ratio (MTB_{it}), and R&D

expenses scaled by total assets (R&D_$Growth_{it}$), for a firm i at year t. E/S_{it} calculated as earnings before interest, taxes, depreciation, and amortization, divided by total sales. $Fin\ Cons_{it}$ is the level of financial constraint faced by the company. $Size_{it}$ is firm size. $MOWN_{it}$ measures managerial ownership structure of a firm i at year t. $BLOCK_{it}$ measures blockholder ownership structure of a firm i at year t. FFR_{it} is four-firm concentration ratio measures product market competition. $Beta_{it}$ measures the systematic risk of firm i at year t. The models include year fixed effects and industry fixed effects. Industries fixed effects are based on two-digit SIC industry code.

4.4 Empirical Results

4.4.1. Summary Statistics

Table 4.2 presents the descriptive statistics for the variables used in the main analyses, including strategic information disclosure, managerial ability, and control variables. SID7 is the strategic information disclosure score, which takes a value between 0 and 1. It can be observed that there is a wide range in the amount of strategic information released by sample firms. The highest strategic information disclosure score is 1, meaning that these firms disclose all categories of strategic information (7 categories); the lowest score is 0, implying that some firms do not provide any information related to their strategic plans. This study has two main independent variables, managerial efficiency (MA) and decile ranks of MA (Rank), which capture managerial ability. The mean value of MA is –0.619, and the median is –0.055, with standard deviation of 0.130. The values range from –0.887 to 0.410. MA variation is consistent with the variation in Demerjian et al. (2012). Rank in the same period reports a mean of 0.511, with standard deviation of 0.254.

Table 4.3 reports the Pearson and Spearman correlation matrix of dependent and independent variables. Pearson's correlation coefficients are shown in the lower triangle while Spearman's rank correlations appear above the diagonal. Significant correlation at p<0.1 are in bold. As expected, the two proxies of managerial ability (MA

and Rank) are highly and positively associated with each other. In addition, strategic information disclosure (SID7) is negatively correlated with the two measures of corporate reputation (MA and Rank) respectively. This negative relationship implies that high-ability managers are tend to release less strategic information to the public.

Table 4. 2 Descriptive Statistics

Variables	Mean	Dev.	Min	Max	P25	P50	P75
SID7	0.357	0.211	0.000	1.000	0.143	0.429	0.571
MA	–0.619	0.130	–0.887	0.410	–0.128	–0.055	0.007
Rank	0.511	0.254	0.100	1.000	0.300	0.500	0.700
BoardSize	10.843	2.058	3.000	29.000	10.000	11.000	12.000
Meetings	7.903	3.270	2.000	43.000	6.000	7.000	9.000
Independence	0.524	0.169	0.000	0.933	0.417	0.530	0.636
MOWN	0.035	0.075	0.000	0.816	0.006	0.013	0.030
BLOCK	0.236	0.131	0.000	0.909	0.142	0.223	0.306
Fin Cons	0.534	0.499	0.000	1.000	0.000	1.000	1.000
Analyst	2.938	0.395	0.000	4.019	2.714	2.970	3.209
FFR	0.374	0.185	0.163	0.997	0.255	0.310	0.444
E/S	0.229	0.165	–3.433	0.740	0.139	0.215	0.311
Size	9.747	1.072	6.814	13.673	7.033	9.573	10.356
MTB	3.609	2.389	0.311	13.180	1.910	2.908	4.574
PE	23.813	19.220	1.578	197.571	14.491	19.002	26.000
R&D_Growth	0.026	0.048	0.000	0.576	0.000	0.003	0.031
Beta	1.061	0.506	–0.879	3.650	0.699	1.029	1.370
Firm age	3.499	0.647	0.000	4.159	3.091	3.664	4.094

Note: This table reports the descriptive statistics for the variables used in the main analysis. The sample period is from 2009 to 2018. SID7 is strategic information disclosure score that takes the value from 0 to 1. MA is managerial ability score, developed by Demerjian et al. (2012). Rank is decile ranks of MA. BoardSize is the number of directors on the board. Meetings is the number of board meetings. Independence is the percentage of independent board members. MOWN is the aggregate percentage of common shares owned by management. BLOCK is the aggregate percentage of common shares owned by blockholders (blockholder define as a shareholder who holds 5% or more of company's ordinary shares). Fin Cons is a dummy variable of companies' financial constraint, and it takes value of "1" if the company with a dividend payout ratio (calculated as dividends/net profit) above the sample median. Analyst is the number of analysts following. FFR is four-firm concentration ratio is a proxy for product market competition, calculated as the proportion of total sales in an industry produced by the four largest firms in an industry. E/S is corporate operation profitability, measured as the company's earnings before interests, taxes, depreciation, and amortization, divided by total sales. Size is natural logarithm of a firm's total assets. MTB is market to book ratio. PE is price to earnings ratio. R&D_Growth measures growth opportunities (R&D expenditures scaled by total assets) of a firm. Beta measures the systematic risk of the firm. Firm age is natural logarithm of one plus the number of years the firm has been in Compustat. All variables are defined in Appendix 3.

Table 4. 3 Correlation matrix

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
A SID7	**1**	**–0.104**	**–0.063**	**0.103**	**0.152**	**0.052**	**–0.085**	**–0.102**	**0.074**	**0.034**	**–0.178**	0.084	**0.167**	**0.246**	**0.027**	**0.067**	**–0.071**	0.069
B MA	**–0.083**	**1**	**0.851**	**–0.109**	**–0.141**	–0.021	0.014	0.006	–0.021	**0.082**	**0.046**	0.025	0.002	**–0.133**	**0.062**	0.007	0.023	**–0.107**
C Rank	**–0.065**	**0.757**	**1**	**–0.072**	**–0.123**	–0.010	–0.024	–0.005	0.014	0.021	–0.015	**0.103**	**0.039**	**–0.071**	**0.109**	**0.042**	–0.009	**–0.061**
D BoardSize	**0.104**	**–0.108**	**–0.053**	**1**	**0.123**	**0.043**	**–0.112**	**–0.127**	**0.236**	0.016	**0.053**	**–0.106**	**0.299**	**–0.066**	**–0.028**	**–0.074**	**–0.063**	**0.322**
E Meetings	**0.103**	**–0.122**	**–0.115**	**0.108**	**1**	**0.149**	**–0.205**	**–0.030**	0.002	**–0.061**	**–0.151**	**0.048**	**0.056**	0.061	**–0.111**	**–0.084**	–0.001	**0.092**
F Independence	**0.053**	–0.019	–0.009	**0.048**	**0.113**	**1**	**–0.3**	**–0.096**	**0.043**	**–0.054**	**–0.086**	**0.040**	**0.081**	**0.056**	**–0.085**	**–0.084**	0.044	0.013
G MOWN	**–0.088**	0.019	–0.015	0.039	**–0.076**	**–0.166**	**1**	**0.306**	**–0.163**	**–0.061**	**0.159**	**–0.161**	**–0.356**	**–0.123**	**0.055**	**0.069**	**–0.039**	**–0.184**
H BLOCK	**–0.123**	0.006	–0.001	**–0.104**	0.000	**–0.099**	**0.455**	**1**	**–0.125**	**–0.093**	**0**	**–0.088**	**–0.311**	–0.066	0.004	**0.028**	**0.087**	**–0.131**
I Fin Cons	**0.076**	–0.009	0.014	**0.217**	–0.014	**0.047**	**–0.039**	**–0.129**	**1**	**–0.026**	**0.009**	**0.032**	**0.198**	**0.011**	0.076	**0.159**	**–0.157**	**0.247**
J Analyst	**0.041**	**0.052**	–0.001	0.022	**–0.058**	**–0.048**	**0.022**	**–0.083**	**–0.029**	**1**	**–0.018**	**0.126**	**0.438**	**0.074**	**0.125**	**0.039**	**–0.008**	**–0.150**
K FFR	**–0.172**	–0.028	0.014	0.067	**–0.133**	**–0.066**	**0.145**	**0.028**	**0.012**	**0.005**	**1**	**–0.445**	**–0.14**	**–0.373**	**–0.070**	**–0.107**	**0.025**	**0.033**
L E/S	0.061	**0.061**	**0.114**	**–0.076**	**0.053**	**0.031**	**–0.077**	**–0.077**	**0.035**	**0.100**	**–0.269**	**1**	**0.232**	0.206	**0.120**	**0.145**	**–0.113**	**–0.180**
M Size	**0.162**	–0.021	**0.036**	**0.295**	0.023	**0.092**	**–0.048**	**–0.292**	**0.209**	**0.454**	**–0.073**	**0.213**	**1**	**0.155**	**0.241**	**0.130**	**–0.207**	**0.196**
N R&D_Growth	**0.090**	**–0.105**	**–0.113**	**–0.165**	0.000	0.006	–0.048	**0.026**	**–0.102**	**0.134**	**–0.271**	0.072	**0.072**	**1**	**0.184**	**0.122**	**0.019**	**0.020**
O MTB	–0.006	–0.009	–0.003	**0.044**	–0.003	–0.005	0.009	–0.011	0.032	**0.019**	**0.039**	–0.012	**0.023**	0.003	**1**	**0.375**	**–0.237**	**–0.025**
P PE	0.033	–0.013	–0.014	0.002	–0.006	–0.036	–0.004	–0.010	**0.057**	0.001	–0.002	0.022	0.026	**–0.012**	**0.002**	**1**	–0.172	–0.120
Q Beta	**–0.087**	0.001	–0.018	**–0.064**	–0.008	**0.055**	–0.021	**0.081**	**–0.162**	–0.040	**–0.016**	**–0.102**	**–0.221**	**0.045**	0.000	–0.017	**1**	**–0.029**
R Firm age	0.051	**–0.118**	**–0.084**	**0.294**	**0.040**	**–0.077**	**–0.088**	**–0.127**	**0.218**	**–0.140**	**0.026**	**–0.147**	**0.150**	**–0.092**	**–0.022**	–0.010	–0.031	**1**

Note: This table presents the Pearson and Spearman correlation coefficients for the main variables. The Pearson (Spearman) correlation coefficients are displayed blow (above) the diagonal. The sample period is from 2009 to 2018. All variables are defined in Appendix 3. Significant correlation at p<0.1 are in in bold.

4.4.2. The Effect of Managerial Ability on Strategic Information Disclosure

To analyse the impact of managerial ability on strategic information disclosure, I estimate equations 4.4 and 4.5 and present the results in Columns (1) and (2) of Table 4.4. Columns (1) and (2) present results for OLS regressions investigating the effects of managerial ability on corporate strategic information disclosure. The dependent variable is the strategic information disclosure score (SID7), which ranges from 0 to 1. In Column (1), managerial ability (MA) is negatively and significantly related to strategic information disclosure. In Column (2), it can be observed that the coefficient of Rank (Rank is the decile rank of MA) is also negative and significant. These results indicate that high-ability managers tend to decrease the level of strategic information disclosure. These results also are economically significant. For instance, in Column (1), the coefficient of –0.1387 on MA implies that a one-standard deviation increase in managerial ability is associated with a 5.05 % decrease in strategic information disclosure; in Column (2), the coefficient of –0.0582 on Rank implies that a one-standard deviation increase in the rank of managerial ability is associated with a 4.14 % decrease in strategic information disclosure.

Furthermore, I employ ordered logistic regressions to analyse the effect of managerial ability on corporate strategic information disclosure decisions, and report the results in Table 4.5. The dependent variable is the disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. Column (1) show that the impact of MA on SID is negative and significant at 1% level. In Column (2), the coefficient of Rank is –0.5621, and significant at 1% level. The results of Table 4.5 are consistent with OLS regression results of Table 4.4. Furthermore, my results are consistent with Bochkay et al. (2019), who suggest that low-ability CEO tend to disclose more forward-looking information, as the stakeholders' uncertainty regarding managerial ability, firms' performance, and future prospects increases the demand for additional information and managerial career concerns. Therefore, the potential economic

interpretation of the negative relationship between managerial ability and strategic information disclosure is that stakeholders' uncertainty regarding firms' performance and future prospects increases their information needs for companies and managers' career concerns, thus resulting in increased managerial incentives to provide additional information; however, a firm with a high-ability manager is associated with less stakeholders' uncertainty about the firm's future, thus resulting in decreased outsiders' demand for additional information and manager's career concerns (Bochkay et al., 2019). Moreover, given the existence of the proprietary costs, high-ability managers may have less incentive to disclose strategic information (Bhojraj et al., 2004; Lu and Tucker, 2012).

4.4.3 Robustness Analyses

This section presents the results of robustness tests. First, I conduct an analysis to examine the endogeneity problem between managerial ability and strategic information disclosure. Second, I employ an alternative proxy of managerial ability to repeat my main analysis regarding the relationship between managerial ability and strategic information disclosure. Third, I further analyse whether the main finding of this study is sensitive to the inclusion of additional controls. Finally, I employ the Heckman two-stage analysis to address self-selection bias and sample-selection bias in this study.

4.4.3.1 Endogeneity between Managerial Ability and Strategic Information Disclosure

Thakor's (2015) theory of strategic information disclosure when there is investor-management disagreement suggests that strategic information disclosure may result in heterogeneous beliefs among investors. Agapova and Volkov (2019) argue that investor-management disagreement arises when investors differently interpret information provided by management. With respect to strategic information disclosure, such information is subjective in nature; thus, investors' interpretations may differ due to their heterogeneous beliefs. Consequently, investors may be reluctant to provide

Table 4. 4 The effects of managerial ability on strategic information disclosure

	(1)	(2)
MA	–0.1387***	
	(–4.26)	
Rank		–0.0582***
		(–3.77)
BoardSize	0.0050**	0.0055***
	(2.53)	(2.79)
Meetings	0.0032***	0.0032***
	(2.84)	(2.87)
Independence	0.0006***	0.0006***
	(2.83)	(2.77)
MOWN	0.0597	0.0537
	(1.01)	(0.91)
BLOCK	–0.0765**	–0.0749**
	(–2.17)	(–2.13)
Fin Cons	0.0123	0.0112
	(1.58)	(1.43)
Analyst	0.0389***	0.0379***
	(3.14)	(3.05)
FFR	0.0259	0.0428
	(0.57)	(0.94)
E/S	0.0362	0.0316
	(1.25)	(1.092)
Size	0.0097**	0.0104**
	(2.06)	(2.20)
R&D_Growth	–0.3411***	–0.3334***
	(–3.69)	(–3.61)
MTB	–0.0000	–0.0000
	(–0.44)	(–0.45)
PE	0.0000*	0.0000*
	(1.84)	(1.87)
Beta	–0.0276***	–0.0282***
	(–3.13)	(–3.20)
Constant	–0.0387	0.0022
	(–0.58)	(0.03)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Observations	3068	3068
Adj. R-sq	0.200	0.199

Note: This table shows the results of the impacts of managerial ability on strategic information disclosure. Models (1) and (2) report the results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. MA is managerial ability score, developed by Demerjian et al. (2012). Rank is decile ranks of MA. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Table 4. 5 The effects of managerial ability on strategic information disclosure (Ordered logistic regression)

	(1)	(2)
MA	–1.2697***	
	(–4.17)	
Rank		–0.5621***
		(–3.83)
BoardSize	0.0524***	0.0570***
	(2.74)	(2.99)
Meetings	0.0299***	0.0302***
	(2.82)	(2.85)
Independence	0.0072***	0.0070***
	(3.38)	(3.28)
MOWN	0.5217	0.4590
	(0.91)	(0.80)
BLOCK	–0.8222**	–0.7959**
	(–2.46)	(–2.38)
Fin Cons	0.1095	0.0995
	(1.48)	(1.34)
Analyst	0.4074***	0.3979***
	(3.50)	(3.42)
FFR	0.2112	0.3598
	(0.50)	(0.86)
E/S	0.2481	0.2036
	(0.97)	(0.80)
Size	0.0727	0.0808*
	(1.63)	(1.81)
R&D_Growth	–3.5199***	–3.4748***
	(–4.09)	(–4.03)
MTB	–0.0002	–0.0002
	(–0.29)	(–0.29)
PE	0.0004**	0.0004**
	(2.25)	(2.27)
Beta	–0.2484***	–0.2505***
	(–2.98)	(–3.00)
cut1	1.3879**	1.0142
	(2.22)	(1.62)
cut2	2.5183***	2.1436***
	(4.03)	(3.43)
cut3	3.6809***	3.3057***
	(5.88)	(5.27)
cut4	4.9642***	4.5888***
	(7.90)	(7.29)
cut5	6.4593***	6.0829***
	(10.21)	(9.60)
cut6	8.3613***	7.9846***
	(12.92)	(12.32)
cut7	11.1826***	10.8057***
	(13.07)	(12.62)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Observations	3068	3068
Pseudo R-sq	0.075	0.074
Log likelihood	–5034.637	–5035.980

Note: This table shows the results of the impacts of managerial ability on strategic information disclosure. Models (1) and (2) report the results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. MA is managerial ability score, developed by Demerjian et al. (2012). Rank is decile ranks of MA. All regressions control for year and industry fixed effects. The z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

capital (Agapova and Volkov, 2019) and negatively assess the manager's ability.

Considering endogeneity between managerial ability and strategic information disclosure, I conduct a Granger causality test as follow:

$$SID7_{i,t} = \beta_1 SID7_{i,t-1} + \beta_2 MA_{i,t-1} + Controls + Year\ \ Dummies + Industry\ \ Dummies; \quad \text{(eq. 4.6)}$$

$$MA_{i,t} = \beta_1 SID7_{i,t-1} + \beta_2 MA_{i,t-1} + Controls + Year\ \ Dummies + Industry\ \ Dummies, \quad \text{(eq. 4.7)}$$

where $SID7_{i,t-1}$ is the strategic information disclosure score of a firm i at year t–1. $MA_{i,t}$ denotes managerial ability for firm i at year t–1. Control variables are lagged for one year. The results are presented in Table 4.6; they show that the coefficient on MA is statistically significant, but that on SID7 is not. Therefore, managerial ability decreases the level of strategic information disclosure in a Granger sense. However, strategic information disclosure does not influence the managerial ability in a Granger sense.

4.4.3.2 Alternative Measure of Managerial Ability

To check robustness, I examine an alternative proxy of managerial ability. Following Demerjian et al. (2012), I use historical industry-adjusted return on assets (Historical ROA) to measure managerial ability. Table 4.7 presents the results for the effect of managerial ability on strategic information disclosure. Column (1) reports results for OLS regressions. The dependent variable is strategic information disclosure score (SID7), which ranges from 0 to 1. Column (2) reports results for ordered logistic regressions. The dependent variable is the disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. The results indicate that the coefficients on Historical ROA are negative and significant, implying that high-ability managers are correlated with less strategic information disclosure. The results are consistent with my main tests.

Table 4. 6 Robustness tests: Granger causality test

	SID7	MA
	(1)	(2)
L.SID7	0.4131***	–0.0114
	(20.88)	(–1.43)
L.MA	–0.0845***	0.6633***
	(–2.71)	(28.20)
L.BoardSize	–0.0008	–0.0029***
	(–0.38)	(–3.15)
L.Meetings	0.0010	–0.0008
	(0.85)	(–1.37)
L.Independence	0.0003	0.0001
	(1.45)	(0.86)
L.MOWN	0.0848	–0.0351*
	(1.36)	(–1.67)
L.BLOCK	–0.0845**	0.0062
	(–2.41)	(0.38)
L.Fin Cons	0.0076	–0.0000
	(0.98)	(–0.00)
L.Analyst	0.0241**	–0.0038
	(2.06)	(–0.71)
L.FFR	0.0144	–0.0625**
	(0.34)	(–2.44)
L.E/S	–0.0244	–0.0176
	(–0.92)	(–0.72)
L.Size	0.0059	0.0034
	(1.26)	(1.47)
L. R&D_Growth	–0.2589***	–0.2062***
	(–2.97)	(–3.18)
L.MTB	0.0001	–0.0000
	(0.66)	(–0.38)
L.PE	0.0000*	–0.0000
	(1.80)	(–0.42)
L.Beta	–0.0067	–0.0002
	(–0.77)	(–0.04)
Constant	–0.0124	–0.0448
	(–0.20)	(–1.03)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Observations	2628	2606
Adj. R-sq	0.335	0.607

Note: This table reports robustness tests. Models (1) and (2) show the results of the Granger causality test. The dependent variable of Model (1) is strategic information disclosure (SID7). In Model (1), I regress SID7 on lagged MA and lagged SID7, with same set of lagged control variables. The dependent variable of Model (2) is managerial ability (MA). In Model (2), I regress MA on lagged SID7 and lagged MA, with same set of lagged control variables. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

4.4.3.3 Additional Controls

In this section, I further analyse whether the main finding of this study is sensitive to the inclusion of additional controls. First, I investigate whether a company's age may influence the company's strategic information disclosure decisions. Lu and Tucker (2012) show that companies in the growth stage of their life cycle provide a lower level of strategic plan disclosure; however, turnaround companies tend to release the strategic

Table 4. 7 Robustness tests: Alternative measure of managerial ability

	OLS regression	Ordered logistic regression
	(1)	(2)
Historical ROA	–0.0012*	–0.0124**
	(–1.92)	(–1.98)
BoardSize	0.0057***	0.0595***
	(3.00)	(3.18)
Meetings	0.0037***	0.0347***
	(3.48)	(3.48)
Independence	0.0007***	0.0078***
	(3.40)	(3.84)
MOWN	0.0575	0.4233
	(1.02)	(0.79)
BLOCK	–0.0679**	–0.6837**
	(–2.05)	(–2.10)
Fin Cons	0.0095	0.0821
	(1.25)	(1.13)
Analyst	0.0367***	0.3864***
	(3.27)	(3.55)
FFR	0.0438	0.3854
	(1.07)	(0.98)
E/S	0.0054	–0.0007
	(0.24)	(–0.00)
Size	0.0105**	0.0841*
	(2.32)	(1.92)
R&D_Growth	–0.2532***	–2.5941***
	(–3.29)	(–3.53)
MTB	–0.0001	–0.0004
	(–1.15)	(–0.89)
PE	0.0000**	0.0003**
	(2.16)	(2.30)
Beta	–0.0327***	–0.3061***
	(–3.93)	(–3.78)
Constant	–0.0079	
	(–0.12)	
cut1		1.1016*
		(1.86)
cut2		2.2672***
		(3.84)
cut3		3.4504***
		(5.83)
cut4		4.7477***
		(8.01)
cut5		6.2394***
		(10.44)
cut6		8.1766***
		(13.24)
cut7		10.9974***
		(13.29)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Observations	3452	3452
Adj. R-sq	0.197	
Pseudo R-sq		0.072

Note: This table shows the results of the impacts of managerial ability (alternative measure) on strategic information disclosure. Models (1) presents results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Models (2) presents results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics or z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

plans related information. The potential reason is that proprietary disclosure costs are higher for growth companies than turnaround companies, because growth companies tend to develop unique technologies, products, business processes, and strategies. According to Lu and Tucker (2012), companies at different stages tend to choose different disclosure strategies, therefore I include Firm age as an additional control variable. In Table 4.8 (Columns (1), (4), (5), and (8)), the results show that the association between firm age and strategic information disclosure is negative but insignificant, implying that firm age do not significantly affect firms' strategic information disclosure policy. Notably, however, the coefficient on MA remains negative and significant. The results are same as my main tests, and thus, support my main findings.

Second, a recent study suggests that young CEOs are associated with increased corporate forward-looking disclosure and disclosure tone (Bochkay et al., 2019). They suggest that young managers are encouraged to provide more forward-looking information to reduce investors' uncertainty about firms' future performance, and thus reduce their managerial career concerns. Consequently, I include Executive age as an additional control variable. The results of Columns (2), (4), (6), and (8) in Table 4.8 show that Executive age significantly and negatively affect strategic information disclosure. Moreover, MA still significantly and negatively affect strategic information disclosure after control Executive age. Accordingly, the results support my main finds.

Finally, I take CEO compensation into account. Prior studies document that compensation is an important factor that influences managerial decisions (e.g., Demerjian et al., 2012; De Franco et al., 2017; Wang et al., 2017). In Table 4.8, the results of Columns (3), (4), (7), and (8) show that Compensation is significantly and positively associated with strategic information disclosure. Note that the effect of MA on strategic information disclosure is negative and significant after control Compensation, therefore, support my main finds.

In sum, my findings are robust and insensitive to the inclusion of additional controls, further confirming that the managerial ability plays a vital role in influencing corporate strategic information disclosure activities.

4.4.3.4 Heckman two-stage analysis

Firms may employ high-ability managers if they intend to avoid proprietary costs, which leads to a self-selection problem in this study. Therefore, I employ the Heckman two-stage analysis to address the self-selection bias in this study.

In the first stage regression (not reported), this study uses a probit model to predict the likelihood of hiring high-ability managers by the S&P 500 index firms. In this model, I include all variables used in my previous tests. Besides, I choose two additional instrumental variables (advertising expenses and the number of employees), which have no direct impact on strategic information disclosure and significantly correlated with managerial ability. The second-stage regressions include the Inverse Mills ratio obtained from the first-stage regression. Table 4.9 reports the Heckman two-stage regression results. In Column (1), managerial ability (MA) is negatively and significantly related to strategic information disclosure. In Column (2), it can be observed that the coefficient of Rank (Rank is the decile rank of MA) is also negative and significant. These results again confirm that high-ability managers tend to decrease the level of strategic information disclosure. Finally, the Inverse Mills ratio (IMR) is significant, implying that self-selection bias may affect my results. More importantly, the negative association between managerial ability and strategic information disclosure is unaffected employing the Heckman two-stage regression.

Table 4. 8 Robustness tests: Additional controls

	OLS regression							Ordered logistic regression
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MA	–0.1390***	–0.1420***	–0.1368***	–0.1377***	–1.2834***	–1.2998***	–1.2458***	–1.2661***
	(–4.33)	(–4.42)	(–4.27)	(–4.28)	(–4.25)	(–4.31)	(–4.14)	(–4.16)
Firm age	–0.0007			0.0001	–0.0291			–0.0277
	(–0.09)			(0.01)	(–0.41)			(–0.38)
Executive age		–0.1186*		–0.1268**		–1.0932*		–1.1750**
		(–1.93)		(–2.05)		(–1.86)		(–1.99)
Compensation			0.0233**	0.0246**			0.2519**	0.2713**
			(2.30)	(2.40)			(2.40)	(2.55)
BoardSize	0.0051**	0.0052**	0.0045**	0.0046**	0.0540***	0.0534***	0.0474**	0.0500**
	(2.37)	(2.46)	(2.15)	(2.16)	(2.58)	(2.62)	(2.32)	(2.38)
Meetings	0.0032***	0.0032***	0.0030***	0.0030**	0.0301***	0.0299***	0.0283***	0.0278**
	(2.74)	(2.74)	(2.60)	(2.56)	(2.75)	(2.73)	(2.58)	(2.53)
Independence	0.0006***	0.0006**	0.0006***	0.0006**	0.0070***	0.0064***	0.0073***	0.0064***
	(2.74)	(2.39)	(2.80)	(2.38)	(3.20)	(2.87)	(3.33)	(2.83)
MOWN	0.0593	0.0502	0.0519	0.0479	0.5062	0.4481	0.4598	0.4262
	(0.94)	(0.80)	(0.82)	(0.76)	(0.83)	(0.73)	(0.76)	(0.70)
BLOCK	–0.0766**	–0.0773**	–0.0782**	–0.0789**	–0.8284**	–0.8269**	–0.8449**	–0.8541**
	(–2.16)	(–2.18)	(–2.20)	(–2.22)	(–2.40)	(–2.40)	(–2.45)	(–2.47)
Fin Cons	0.0124	0.0141*	0.0124	0.0136*	0.1149	0.1266*	0.1045	0.1210
	(1.55)	(1.79)	(1.57)	(1.69)	(1.49)	(1.67)	(1.38)	(1.57)
Analyst	0.0387***	0.0351***	0.0405***	0.0375***	0.3959***	0.3731***	0.4300***	0.3930***
	(3.14)	(2.93)	(3.37)	(3.01)	(3.32)	(3.23)	(3.71)	(3.27)
FFR	0.0257	0.0270	0.0186	0.0202	0.2010	0.2085	0.1377	0.1292
	(0.62)	(0.65)	(0.45)	(0.49)	(0.51)	(0.53)	(0.35)	(0.33)
E/S	0.0359	0.0383	0.0423*	0.0422*	0.2381	0.2697	0.3089	0.3056
	(1.47)	(1.59)	(1.75)	(1.75)	(1.17)	(1.36)	(1.57)	(1.55)
Size	0.0098**	0.0107**	0.0053	0.0062	0.0765	0.0831*	0.0255	0.0381
	(2.02)	(2.21)	(1.03)	(1.19)	(1.64)	(1.78)	(0.52)	(0.76)
R&D_Growth	–0.3415***	–0.3456***	–0.3220***	–0.3306***	–3.5323***	–3.5497***	–3.3576***	–3.4332***
	(–3.93)	(–3.96)	(–3.74)	(–3.83)	(–4.20)	(–4.20)	(–4.02)	(–4.10)
MTB	–0.0000	–0.0000	–0.0000	–0.0000	–0.0002	–0.0002	–0.0001	–0.0002
	(–0.65)	(–0.68)	(–0.61)	(–0.64)	(–0.45)	(–0.46)	(–0.38)	(–0.46)
PE	0.0000***	0.0000***	0.0000***	0.0000***	0.0004***	0.0004***	0.0004***	0.0004***

	(2.74)	(2.63)	(2.72)	(2.59)	(3.17)	(3.05)	(3.22)	(3.06)
Beta	–0.0276***	–0.0264***	–0.0286***	–0.0282***	–0.2505***	–0.2342***	–0.2585***	–0.2546***
	(–3.14)	(–3.00)	(–3.24)	(–3.18)	(–2.96)	(–2.76)	(–3.04)	(–2.98)
Constant	–0.0366	0.4345*	–0.1474*	0.3521				
	(–0.53)	(1.71)	(–1.78)	(1.38)				
cut1					1.2940**	–2.9674	2.5987***	–2.0746
					(1.98)	(–1.22)	(3.18)	(–0.85)
cut2					2.4244***	–1.8361	3.7311***	–0.9418
					(3.73)	(–0.76)	(4.58)	(–0.39)
cut3					3.5871***	–0.6731	4.8946***	0.2225
					(5.52)	(–0.28)	(5.99)	(0.09)
cut4					4.8706***	0.6111	6.1785***	1.5080
					(7.48)	(0.25)	(7.54)	(0.62)
cut5					6.3658***	2.1112	7.6797***	3.0108
					(9.70)	(0.87)	(9.34)	(1.24)
cut6					8.2678***	4.0061*	9.5762***	4.9081**
					(12.25)	(1.65)	(11.42)	(2.01)
cut7					11.0891***	6.8277***	12.3980***	7.7302***
					(12.75)	(2.72)	(12.66)	(3.07)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3068	3062	3062	3062	3068	3062	3062	3062
Adj. R-sq	0.200	0.201	0.201	0.202				
Pseudo R-sq					0.075	0.075	0.075	0.076
Log likelihood					–5034.542	–5022.374	–5021.139	–5018.858

Note: This table shows the results of the impacts of managerial ability on strategic information disclosure. I include three additional control variables into my models, including Firm age, Executive age, and Compensation. Models (1) to (4) report the results of the OLS regressions. The dependent variable is strategic information disclosure score (SID7) that ranges from 0 to 1. Models (5) to (8) report the results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics or z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Table 4. 9 The effects of managerial ability on strategic information disclosure (Heckman two-stage analysis)

	(1)	(2)
MA	–2.6046***	
	(–3.95)	
Rank		–1.1882***
		(–4.07)
BoardSize	0.2320***	0.2416***
	(6.48)	(6.74)
Meetings	–0.0270	–0.0338*
	(–1.32)	(–1.66)
Independence	0.0155***	0.0151***
	(4.27)	(4.16)
MOWN	3.4007***	3.1854***
	(3.56)	(3.36)
BLOCK	–5.5420***	–5.4122***
	(–7.40)	(–7.25)
Fin Cons	0.6283***	0.6187***
	(4.47)	(4.40)
Analyst	1.5227***	1.5243***
	(6.03)	(5.98)
FFR	–0.0463	0.0534
	(–0.06)	(0.07)
E/S	–4.9403***	–4.8269***
	(–6.27)	(–6.00)
Size	0.4931***	0.4862***
	(5.67)	(5.57)
R&D_Growth	–9.7383***	–9.7714***
	(–4.90)	(–4.78)
MTB	0.0001	0.0001
	(0.09)	(0.08)
PE	0.0003*	0.0003*
	(1.72)	(1.85)
Beta	–0.2862	–0.2743
	(–1.57)	(–1.49)
IMR	2.7848***	2.7866***
	(22.70)	(22.79)
cut1	17.2710***	16.5194***
	(13.87)	(13.05)
cut2	20.2792***	19.5181***
	(16.10)	(15.24)
cut3	21.7762***	21.0122***
	(17.23)	(16.35)
cut4	23.1522***	22.3883***

	(18.29)	(17.41)
cut5	24.8850***	24.1231***
	(19.51)	(18.65)
cut6	27.0343***	26.2734***
	(20.81)	(19.92)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Observations	1164	1164
Pseudo R-sq	0.201	0.201
Log likelihood	–1615.0603	–1614.7156

Note: This table shows the Heckman two-stage analysis results. This table only presents the results from the second stage regression of the Heckman test. The second-stage regressions include the Inverse Mills ratio (IMR) obtained from the first-stage regression. This table shows the results of the impacts of managerial ability on strategic information disclosure. Columns (1) and (2) report the results of the ordered logistic regressions. The dependent variable is disclosure score for strategic information (SID). The total score for each company ranges from 0 to 7. MA is managerial ability score, developed by Demerjian et al. (2012). Rank is decile ranks of MA. All regressions control for year and industry fixed effects. The z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

4.4.4. Additional Analyses on Strategic Information Disclosure

4.4.4.1. Strategic Information Disclosure Tone

The analyses in the previous sections of this study are based on the quantity of strategic information disclosure. Burks et al. (2018) suggest that disclosure tone is a key element of basic disclosure theory: it assumes that good news is for the capital market and bad news is for competitors. Recently, Bochkay et al. (2019) find that CEOs' tenure negatively associated with corporate forward-looking disclosure tone. They suggest that managerial ability uncertainty increases the demand for additional information and managerial career concerns, and therefore, resulting in positive disclosure tone; on the contrary, a CEO with long tenure tend to disclose forward-looking information in negative tone. Inspired by these studies, I perform the tests to analyse the relationship between managerial ability and disclosure tone of strategic information. I apply Loughran and McDonald (2011) dictionary of negative and positive words to evaluate strategic information extracted from all transcripts of my sample firms. Following Burks et al. (2018), I measure the disclosure tone by counting the number of positive words, negative words, and net positive words. Positive words measured as the number of positive words scaled by total content words contained in strategic information related sentences extracted from all transcripts during year t by firm i. Negative words measured as the number of negative words scaled by total content words contained in strategic information related sentences extracted from all transcripts during year t by firm i. Net positive measured as positive words minus negative words scaled by total content words contained in strategic information related sentences extracted from all transcripts during year t by firm i.

The results are presented in Table 4.10. Columns (1) and (4) report the relationship between managerial ability and positive tone in strategic information disclosure. The results show that increase in positive tone are associated with increased managerial ability. These results also are economically significant. For instance, in column (1), the

Table 4. 10 The effects of managerial ability on disclosure tone of strategic information

	Positive	Negative	Net positive	Positive	Negative	Net positive
	(1)	(2)	(3)	(4)	(5)	(6)
MA	0.0038**	–0.0010	0.0048**			
	(2.02)	(–1.23)	(2.29)			
Rank				0.0017*	–0.0002	0.0019*
				(1.87)	(–0.44)	(1.77)
BoardSize	0.0001	–0.0001	0.0001	0.0001	–0.0000	0.0001
	(0.62)	(–1.18)	(0.97)	(0.52)	(–1.06)	(0.83)
Meetings	–0.0001	0.0000	–0.0001	–0.0001	0.0000	–0.0001
	(–0.80)	(0.97)	(–1.11)	(–0.82)	(1.03)	(–1.15)
Independence	0.0000	–0.0000	0.0000	0.0000	–0.0000	0.0000
	(0.24)	(–0.69)	(0.46)	(0.27)	(–0.72)	(0.49)
MOWN	0.0017	–0.0011	0.0028	0.0019	–0.0011	0.0029
	(0.43)	(–0.71)	(0.63)	(0.47)	(–0.71)	(0.66)
BLOCK	–0.0002	0.0015	–0.0016	–0.0002	0.0015	–0.0017
	(–0.07)	(1.33)	(–0.62)	(–0.09)	(1.34)	(–0.64)
Fin Cons	0.0017***	0.0008***	0.0009*	0.0018***	0.0008***	0.0009*
	(3.70)	(3.93)	(1.65)	(3.76)	(3.90)	(1.72)
Analyst	–0.0025***	0.0001	–0.0026***	–0.0024***	0.0001	–0.0026***
	(–2.89)	(0.42)	(–2.83)	(–2.86)	(0.44)	(–2.80)
FFR	0.0026	–0.0007	0.0033	0.0021	–0.0005	0.0026
	(1.00)	(–0.64)	(1.12)	(0.79)	(–0.52)	(0.89)
E/S	–0.0101***	–0.0002	–0.0099***	–0.0100***	–0.0003	–0.0097***
	(–4.88)	(–0.23)	(–4.42)	(–4.84)	(–0.38)	(–4.33)
Size	0.0007**	–0.0002	0.0009**	0.0007**	–0.0002	0.0008**
	(2.23)	(–1.43)	(2.49)	(2.17)	(–1.42)	(2.44)
R&D_Growth	–0.0328***	–0.0054***	–0.0275***	–0.0329***	–0.0051***	–0.0278***
	(–5.59)	(–3.14)	(–4.56)	(–5.57)	(–2.97)	(–4.59)
MTB	–0.0000	–0.0000	–0.0000	–0.0000	–0.0000	–0.0000
	(–0.29)	(–0.39)	(–0.12)	(–0.29)	(–0.39)	(–0.13)
PE	–0.0000	0.0000	–0.0000	–0.0000	0.0000	–0.0000
	(–0.29)	(0.65)	(–0.51)	(–0.31)	(0.67)	(–0.53)
Beta	–0.0004	0.0004*	–0.0008	–0.0004	0.0004*	–0.0008
	(–0.72)	(1.69)	(–1.28)	(–0.67)	(1.66)	(–1.24)
Constant	0.0276***	0.0097***	0.0179***	0.0264***	0.0099***	0.0165***
	(6.05)	(5.86)	(3.56)	(5.85)	(5.90)	(3.29)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2733	2733	2733	2733	2733	2733
Adj. R-sq	0.112	0.053	0.090	0.112	0.053	0.089

Note: This table shows the results of the impacts of managerial ability on disclosure tone of strategic information. The dependent variable of Models (1) and (4) is positive strategic information disclosure tone. The dependent variable of Models (2) and (5) is negative strategic information disclosure tone. The dependent variable of Models (3) and (6) is strategic information disclosure tone change (the difference between positive tone and negative tone). All regressions control for year and industry fixed effects. All industries are based on 2-digit SIC codes. The t-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

coefficient of 0.0038 on MA implies that a one-standard deviation increase in managerial ability is associated with a 1.66 % increase in positive words of strategic information disclosure. Results in Columns (2) and (5) show that the association between negative tone and managerial ability is negative, but insignificant. The findings in Columns (3) and (6) indicate a positive and statistically significant shift (the difference between positive and negative tone) in strategic information disclosure tone when firms led by high-ability managers. These results imply that high-ability managers tend to disclose strategic information with positive tone.

4.4.4.2 The Effects of Managerial Ability on Various Categories of Strategic Information Disclosure

I further test the impacts of managerial ability on various categories of strategic information disclosure. Following Agapova and Volkov (2019), the current study classifies strategic information into seven categories: mergers and acquisitions, research and development, consolidation, divestitures, cost control, move (offices, facilities), and growth (expansion). Next, I measure each disclosure category using a binary variable. Specifically, this variable equals 1 if firm i discloses strategic information in that category in year t, and 0 if it does not.

I employ a probit regression to test the effects of managerial ability on various categories of strategic information disclosure. The results are presented in Table 4.11. The dependent variable of Column (1) is M&A: a dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise. The dependent variable of Column (2) is Cost: a dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise. The dependent variable of Column (3) is Divest: a dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise. The dependent variable of Column (4) is Consolidate: a dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise. The dependent variable of Column (5) is Growth: a

Table 4. 11 The effects of managerial ability on various categories of strategic information disclosure

	M&A	Cost	Divest	Consolidate	Growth	Move	R&D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
MA	–0.6033***	–0.4922**	–0.3642	–0.7372***	–0.6785***	0.9537**	–0.5328**
	(–2.66)	(–1.99)	(–1.38)	(–3.31)	(–2.89)	(2.28)	(–2.07)
BoardSize	0.0057	–0.0006	0.0086	0.0324**	0.0214	0.0301	0.0417***
	(0.40)	(–0.03)	(0.50)	(2.37)	(1.52)	(1.23)	(2.79)
Meetings	0.0163**	0.0106	0.0234***	0.0249***	–0.0056	0.0089	0.0046
	(2.00)	(1.25)	(2.67)	(3.11)	(–0.71)	(0.62)	(0.56)
Independence	0.0019	0.0027	0.0017	–0.0007	0.0057***	–0.0011	0.0035**
	(1.25)	(1.51)	(0.87)	(–0.43)	(3.66)	(–0.39)	(2.08)
MOWN	1.0871***	–0.5057	–0.4776	0.1214	0.0449	–0.9108	0.6921*
	(2.60)	(–0.98)	(–0.86)	(0.30)	(0.11)	(–1.00)	(1.76)
BLOCK	–0.5131**	0.2447	0.2526	–0.5216**	–0.1579	0.2446	–0.8129***
	(–2.12)	(0.88)	(0.83)	(–2.16)	(–0.63)	(0.59)	(–3.11)
Fin Cons	0.0315	–0.0579	0.2207***	0.1590***	–0.0417	–0.0954	0.0518
	(0.58)	(–0.92)	(3.35)	(2.97)	(–0.75)	(–0.96)	(0.88)
Analyst	0.0240	0.3133***	–0.1292	0.1799**	0.2197***	0.2407	0.1547*
	(0.29)	(3.05)	(–1.22)	(2.06)	(2.60)	(0.93)	(1.72)
FFR	–0.3857	0.1098	–0.9451*	–0.0379	0.6167*	1.2983**	0.5475*
	(–1.23)	(0.29)	(–1.93)	(–0.12)	(1.94)	(2.15)	(1.66)
E/S	0.2978	0.4948*	–0.3528	–0.3850*	0.6153***	0.6185	0.1576
	(1.27)	(1.91)	(–1.52)	(–1.74)	(3.01)	(1.25)	(0.61)
Size	0.0688**	–0.0206	0.1132***	–0.0298	–0.0043	0.0030	0.1267***
	(2.08)	(–0.54)	(2.81)	(–0.92)	(–0.13)	(0.05)	(3.52)
R&D_Growth	–3.7355***	–2.0794***	–2.5624**	–1.9086***	–1.3350*	–2.6533	4.1826***
	(–5.78)	(–2.93)	(–2.45)	(–2.97)	(–1.92)	(–1.37)	(4.42)
MTB	0.0002	–0.0003	–0.0003	–0.0002	–0.0004	0.0001	0.0000
	(0.50)	(–0.74)	(–0.68)	(–0.50)	(–0.89)	(0.21)	(0.06)
PE	0.0001	–0.0001	0.0005**	0.0002	–0.0000	–0.0000	0.0002
	(1.16)	(–0.56)	(2.30)	(1.60)	(–0.13)	(–0.08)	(1.06)
Beta	–0.0984	0.0449	0.0487	–0.0834	–0.1799***	–0.1304	–0.2418***
	(–1.63)	(0.66)	(0.64)	(–1.38)	(–2.84)	(–1.08)	(–3.60)
Constant	–1.2574***	–2.5267***	–1.1960**	–1.0478**	–0.6971	–3.2637***	–3.8680***
	(–2.74)	(–4.46)	(–2.11)	(–2.23)	(–1.38)	(–3.37)	(–6.90)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3044	2988	2831	3027	3035	2737	3009
Pseudo R-sq	0.093	0.049	0.063	0.077	0.077	0.075	0.247

Note: This table presents the results of the impacts of managerial ability on various categories of strategic information disclosure. All models are probit regressions. The dependent variable of Model (1) is M&A: a dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise. The dependent variable of Model (2) is Cost: a dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise. The dependent variable of Model (3) is Divest: a dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise. The dependent variable of Model (4) is Consolidate: a dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise. The dependent variable of Model (5) is Growth: a dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise. The dependent variable of Model (6) is Move: a dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise. The dependent variable of Model (7) is R&D: a dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise. All regressions control for year and industry fixed effects. The z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All variables are defined in Appendix 3. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise. The dependent variable of Column (6) is Move: a dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise. The dependent variable of Column (7) is R&D: a dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise. The results show that managerial ability significantly and negatively influences strategic information disclosure related to M&A, Cost control, Consolidate, Growth, and R&D; managerial ability has a significant positive effect only on strategic information disclosure related to Move. In general, these results support the findings of my main analysis that companies with high-ability managers tend to provide less strategic information.

4.5 Summary

This study analyses the association between managerial ability and corporate strategic information disclosure decisions. Based on a sample of US non-financial firms included in the S&P 500 index during the period from 2009 to 2018, the results suggest that companies with high-ability managers are associated with less strategic information disclosure. The potential economic interpretation of this negative relationship is that stakeholders' uncertainty regarding firms' performance and future prospects increases their information needs for companies and managers' career concerns, thus resulting in increased managerial incentives to provide additional information; however, a firm with a high-ability manager is associated with less stakeholders' uncertainty about the firm's future, thus resulting in decreased outsiders' demand for additional information and manager's career concerns (Bochkay et al., 2019). Moreover, given the existence of the proprietary costs, high-ability managers are discouraged to release strategic information (Bhojraj et al., 2004; Lu and Tucker, 2012). To verify the main findings, this study conducts a series of robustness analyses, including the Granger causality test, alternative proxies for managerial ability (Historical ROA), and additional controls

(Firm age, Executive age, and Compensation). The results of all robustness analyses support my previous conclusion.

In order to complement the main analysis in this study and deeply investigate how managerial ability heterogeneity affects companies' strategic information disclosure behaviour, this study further conducts several additional analyses on strategic information disclosure. First, I explore the relationship between managerial ability and the tone changes of strategic information disclosure. My findings indicate an increase in the positive tone of strategic information disclosure when companies led by high-ability managers. Second, I analyse the effect of managerial ability on various categories of strategic information disclosure. I find that companies with more talented managers tend to reduce the level of all categories of strategic information except for moving-related strategic information. The results support my main finding that more able managers tend to provide less strategic information disclosure.

This study provides the following contributions to the existing literature. First, this study provides new evidence to the disclosure literature on the role of managerial ability heterogeneity. Empirical evidence relating to strategic information disclosure is limited. This study enriches the literature on the determinants of strategic information disclosure. Second, this study contributes to literature by providing new evidence of the consequences of managerial ability heterogeneity. Previous studies investigate the impacts of managerial ability mainly focus on financial disclosure such as earnings forecasts (e.g., Baik et al., 2011; Cao et al., 2019; De Franco et al., 2017; Demerjian et al., 2013). There is no study examining the association between managerial ability and corporate strategic information disclosure decisions. This paper fills this gap by investigating the effect of managerial ability on the quantity and disclosure tone of strategic information.

Prior research does not clearly distinguish the difference between managerial ability

and CEO reputation, however, by exploring the measurements of managerial ability and CEO reputation, I find that the criteria for evaluating managerial ability and CEO reputation is different. More specifically, evaluating managerial ability are more focus on managerial skill to create value for a company, for example, Demerjian et al. (2012) and Demerjian et al. (2013) define managerial ability as managers' efficiency, relative to their industry counterparts, in generating revenues from corporate resources. Therefore, they develop a seminal measurement of managerial ability based on the notion that high-ability managers should better at generating revenues from corporate resource, and argue that this firm efficiency based proxy allows them to better capture the effect of the managerial ability from other effects. Comparatively, the selection criteria for evaluating CEO reputation is broader than managerial ability. For example, Chief Executive magazine evaluates a chief executive of the year based on 11 elements such as courage, CEO respect, moral dimension, personal character, and so on (see full details at https://bit.ly/2A9uFGM). Accordingly, the difference between managerial ability and CEO reputation motives us to analyse the effect of CEO reputation on strategic information disclosure in Chapter 5.

CHAPTER 5 CORPORATE REPUTATION, CEO REPUTATION, AND STRATEGIC INFORMATION DISCLOSURE

5.1 Introduction

Economic research on reputation suggests that reputation-building behaviour is strategically important, because a company's reputation is an intangible asset that can generate future profits (Weigelt and Camerer, 1988). Players' reputation concerns influence their own behaviour. Such influence on a player's behaviour is called reputation effect or reputation mechanism (Cao et al., 2012; Weigelt and Camerer, 1988). The reputation effect helps companies to mitigate agency problems, and thus decreases the inefficiencies caused by agency problems and increases the company's opportunities of going public (Gomes, 2000). The reputation effect also influences the behaviour of financial analysts, institutional investors, corporate executives, and auditors (Cao et al., 2012).

Managers believe that providing reliable information can build a reputation for transparent reporting and reduce "information risk" about the company's stock, such as underpricing (Graham et al., 2005). Besides, a timely and honest reputation will enhance the stock price and reduce the cost of capital (Cao et al., 2015; Miller and Bahnson, 2002). Recent research addresses the relationship between reputation management and the disclosure of earnings forecasts. Managers decide whether to release their earnings forecasts based on the impacts of disclosure on their companies' share price and on their reputation among outsiders (Beyer and Dye, 2012). Cao et al. (2012) find that companies with better reputations are associated with higher quality of financial reports. However, with regard to CEO reputation, some studies document that CEO reputation negatively affect corporate disclosure. For example, more reputable CEOs are associated with poorer earnings quality, as more reputable CEOs tend to apply their discretion to manipulate earnings in order to manage market perceptions; also, companies with a poor earnings quality have a high demand for reputable

managers in order to improve their financial reporting quality (Francis et al., 2008); CEOs with longer tenure having more power and/or being more entrenched (Cao et al., 2012); short-tenured managers with high career or reputation concerns because the outsiders know little about their ability, thus, managers with long tenure have less incentive to disclose additional information (Bochkay et al., 2019; Gibbons and Murphy,1992; Park and Yoo, 2016).

In terms of corporate strategic information, research shows that corporate innovative actions may generate positive evaluations (Eberhart et al., 2004; Hellmann and Puri, 2000; Lee et al., 2000; Liao and Lin, 2017; Moran and Ghoshal, 1999). Corporate innovation activities, such as introducing new products or services, may provide information to outsiders about the company's efforts and ability to combine resources in novel ways (Moran and Ghoshal, 1999). Besides, companies pursuing innovations are more likely to obtain venture capital financing than other high-tech start-ups (Hellmann and Puri, 2000). A number of empirical studies show that these activities create value due to their positive association with stock market reaction (Eberhart et al., 2004; Lee et al., 2000; Liao and Lin, 2017). Whittington and Yakis-Douglas (2012) suggest that strategy communications play an active orientation role to the shaping of corporate reputations, for example, new ventures and firms undertaking IPOs mainly communicate their strategy because they need investors and customers. However, strategic information disclosure practices also cause significant harmful impacts on the CEO's reputation, which may reflect in their stock price.[20]

By reviewing the prior literature, it can be observed that there is an increasing number of studies that give attention to reputation-related problems. Moreover, corporate strategic information disclosure plays an important role in the shaping of

[20] Whittington and Yakis-Douglas (2012) document an example of the negative effect of strategic information disclosure on stock price. Specifically, Nokia held a "strategy and finance briefing" on 11 February 2011. Stephen Elop (Nokia's CEO) announced their overall strategies for the company's future such as alliance with Microsoft. However, this strategic information disclosure caused Nokia's stock price to plummet by 7%.

corporate/CEO reputations. Therefore, companies and CEOs with reputation concerns have both incentives and disincentives to provide additional strategic information. However, to date, there is no research addressing the influence of corporate/CEO reputations on strategic information disclosure. In contributing to the disclosure literature, this study examines how corporate reputation and CEO reputation influence companies' disclosure decisions on their strategic information.

Furthermore, this study considers the interaction effect between corporate reputation and CEO reputation. According to Boivie et al. (2016), reputation studies tend to focus on the reputation of one focal actor and its impacts on various outcomes. However, in many settings, there are multiple reputations may affect firms' outcomes, for example, investors may consider both CEO reputation, corporate reputation, and analyst's reputation when they make investment decisions. Therefore, it is important to investigate how the reputation of multiple actors (e.g., CEO reputation and corporate reputation) might jointly affect an outcome or corporate decisions. Besides, Weng and Chen (2017) investigate the effect of interaction between corporate reputation and CEO reputation on corporate financial performance. They find that CEO reputation is more important to firm performance than corporate reputation. Inspired by Boivie et al. (2016) and Weng and Chen (2017), this study examines how CEO reputation and corporate reputation jointly affect corporate decisions on strategic information disclosure.

Based on a sample of US non-financial companies included in the S&P 500 index during the period from 2009 to 2018, this study firstly examines the impacts of corporate reputation on strategic information disclosure. This study finds a significant and positive association between corporate reputation and strategic information disclosure. The results support my hypothesis and show that companies with higher reputation tend to provide more strategic information to the public. Corporate strategic activities are associated with their competitive advantages (Grant, 2003; Porter, 1996) and value creation (Eberhart et al., 2004; Hellmann and Puri, 2000; Lee et al., 2000;

Liao and Lin, 2017; Moran and Ghoshal, 1999). Therefore, reputable companies tend to protect their reputation by providing additional strategies-related information to outsiders, because participating in strategic activities allows them to signal their efforts and ability and influence how outsiders evaluate the companies. This study uses the "America's Most Admired Companies" list and also companies' scores published on that list to measure corporate reputation. However, the list and scores cannot reflect the long-term nature of and changes in corporate reputation. In order to capture such changes over time, and their effect on corporate strategic information disclosure decisions, this study follows Cao et al. (2012) and also calculates the number of sample years to date during which the company is shown on the "America's Most Admired Companies" list. This study finds that the companies with a long-term reputation (companies with longer tenure on the list) tend to increase the level of strategic information disclosure. Next, this study examines how CEO reputation influences strategic information disclosure. Consistent with my hypothesis, this study finds a significant and negative association between CEO reputation and strategic information disclosure. My results suggest that, unlike the impacts of corporate reputation, reputable CEOs tend to reduce the level of strategic information disclosure. The potential reason may be due to the negative effects of such disclosure, for example, investor-management disagreement (Agapova and Volkov, 2019; Thakor, 2015) and a bad stock market reaction after a strategic information announcement by the company's CEO, and thus influence the CEO's reputation (Whittington and Yakis-Douglas, 2012). Besides, short-tenured managers are with high career or reputation concerns because the outsiders know little about their ability, thus, managers with long tenure have less incentive to disclose additional information (Bochkay et al., 2019; Gibbons and Murphy,1992; Park and Yoo, 2016). Based on these reasons, reputable CEOs have strong incentives to protect their own reputation and adopt a conservative approach when they make disclosure decisions, since the costs of strategic information disclosure (bad impacts on CEO's reputation) outweigh the benefits of disclosure (reducing

information asymmetry) for reputable CEOs. As a result, reputable CEOs have disincentives to provide additional strategic information.

Finally, this study conducts the conditional analysis of the high and low corporate/CEO reputation subsamples. The results show that the positive impact of corporate reputation on strategic information disclosure is significant only in firms led by CEOs with poor reputation; The findings suggest that corporate reputation is not necessarily relevant and influential to the firm's decisions making when the firm is led by a reputable CEO; however, reputable companies led by CEOs with poor reputation tend to mitigate the negative impacts of the poor CEO reputation through strategic information disclosure, as such disclosure can to some degree alleviate information asymmetry and a firm's cost of capital (Graham et al., 2005; Lu and Tucker, 2012; Thakor, 2015), and gain the support of investors and analysts (Whittington and Yakis-Douglas, 2012). The results also show that reputable CEOs in firms with good or poor reputation, tend to adopt a conservative approach, providing less strategic information. The potential economic explanation is that reputable CEOs have incentives to protect their own reputation, as strategic information disclosure is sometimes costly such as negative stock market reactions (Whittington and Yakis-Douglas; 2012) and investor-management disagreement (Agapova and Volkov, 2019; Thakor, 2015). Besides, long-tenured managers are with low career or reputation concerns due to the lower level of outsiders' uncertainty about managers' ability, thus, reputable CEOs have less incentive to disclose additional strategic information (Bochkay et al., 2019; Gibbons and Murphy,1992; Park and Yoo, 2016). Based on these results, it can be concluded that the effect of CEO reputation on firms' disclosure decisions making is stronger than the impact of corporate reputation. Moreover, this study introduces the interaction terms between corporate reputation and CEO reputation to further examines the joint effect of corporate reputation and CEO reputation on strategic information discourse. The results suggest that CEO reputation moderates the positive impact of corporate reputation on strategic information disclosure. To verify my main findings, this study

conducts a series of robustness analyses, including the Heckman two-stage analysis, alternative proxies for corporate reputation, alternative proxies for CEO reputation, and additional controls. The results of all robustness analyses support my previous conclusions.

This study contributes to the literature in several aspects. Firstly, it adds to the literature that investigates factors associated with corporate strategic information disclosure. Extensive research suggests that corporate reputation and CEO reputation significantly influence firms' decisions making and outcomes, such as debt financing activities, capital investment, and financial reporting (Boivie et al., 2016; Cao et al., 2012, 2015; Jian and Lee, 2011). To the best of our knowledge, there is no existing studies investigate the relationship between corporate/CEO reputation and strategic information disclosure. This study addresses this gap in the literature and shows that corporate reputation and CEO reputation have significant effects on corporate decisions making on strategic information disclosure. Secondly, this study contributes to the literature by providing new empirical evidence of the interaction effect between corporate reputation and CEO reputation based on strategic information disclosure. It introduces the interaction term that analyses how corporate reputation and CEO reputation interact with each other to shape corporate strategic information disclosure behaviour. My result shows that CEO reputation effect on firms' decisions making is stronger than corporate reputation effect; CEO reputation weakens the effect of corporate reputation on corporate strategic information disclosure behaviour. Prior studies mainly focus on examining corporate reputation and CEO reputation respectively, however, there is little research examining the joint effect between corporate reputation and CEO reputation. Therefore, this study fills this research gap and may serve a reference for corporate operations and market investors.

The remainder of this chapter proceeds as follows. Section 5.2 reviews the literature and develops the hypotheses to be tested. Section 5.3 includes a description of my

sample, variables, and research models. Section 5.4 provides a discussion of the main findings. Section 5.5 gives the summary of this chapter.

5.2 Related Reputation Literature and Hypotheses Development

5.2.1 Research on Reputation

According to Weigelt and Camerer (1988), a company's reputation is an intangible asset that can generate future profits. If a person always fulfils his promises, then it can be inferred that he has a reputation for reliability. Other people make judgments by observing the past, and predict his future behaviour. This person is encouraged to protect and build his reputation, because reputation is an intangible asset for him to earn rent. However, failure to fulfil promises will have a bad long-term impact, because the loss of reputation will influence the behaviour of other players toward him in the future. Therefore, reputation-building behaviour is strategically important. In a game theory model, Weigelt and Camerer (1988) conclude that a player's reputation influences his own behaviour. The player will strategically choose his actions in order to earn future profits. Such influence on a player's behaviour is called reputation effect.

The previous literature indicates that the reputation effect helps companies to mitigate agency problems. According to Gomes (2000), the reputation effect decreases the inefficiencies resulted from agency problems and increases the company's opportunities to go public. Therefore, the reputation effect is economically important when the moral hazard problem is significant. Besides, prior research document that the reputation effect influences the behaviour of financial analyst and corporate executives. Jackson (2005) suggests that more accurate analysts acquire higher future reputations. The author also show that analysts may provide fewer optimistic forecasts due to their reputation concerns. Similarly, Cowen et al. (2003) show that analysts working at reputable banks provide fewer optimistic forecasts than others. Fang and Yasuda (2009) suggest that analysts with reputation concerns are quicker to downgrade their buy recommendations. According to Fang and Yasuda (2014), even under pressure

to provide optimistic forecasts, analysts tend to maintain the accuracy of their forecasts to protect their reputations. Concerned with the reputation effect on corporate executives, studies indicate that reputational penalties are imposed on corporate executives found guilty of financial fraud (Fich and Shivdasani, 2007; Srinivasan, 2005).

Research on disclosure suggest that corporate disclosure decisions also influenced by reputation concerns. Graham et al. (2005) conduct a survey and interview more than 400 executives about their choices related to reporting accounting numbers and voluntary disclosure. They find that managers believe that providing reliable information can build a reputation for transparent reporting and reduce "information risk" about the company's stock (underpricing). Similarly, Miller and Bahnson (2002) believe that establishing a timely and honest reputation will enhance the stock price and reduce the cost of capital. Beyer and Dye (2012) conduct a model to analyse how manager's concern about developing a reputation affects their decisions on earnings forecasts disclosure. They demonstrate that managers may build a reputation for being forthcoming by revealing unfavourable forecasts. In addition, reputational forces can be so strong as to induce some managers to release even the most negative information. Cao et al. (2012) provide empirical evidence that more reputable companies provide financial reports with higher quality; they are less likely to misstate their financial statements.

In sum, although existing studies largely investigate the impacts of reputation on the behaviour of various parties, to best of my knowledge, there is very little research on the association between corporate/CEO reputation and strategic information disclosure. Therefore, this study fills this gap by examining how corporate reputation and CEO reputation affect strategic information disclosure decisions.

5.2.2 Hypothesis Development

5.2.2.1 Corporate Reputation and Strategic Information Disclosure

According to Cao et al. (2012), reputation building is complicated, time-consuming and difficult to imitate. In addition, corporate reputation is costly to rebuild once is damaged. Therefore, companies with higher reputations are encouraged to act differently from other companies in order to protect their reputation.

This study argues that higher reputation companies may be likely to disclose additional strategic information to outsiders because the competitive advantage of strategic activities enhances their reputations. According to Porter (1996), a company can outperform its competitors only if it chooses to perform activities differently. Grant (2003) suggests that strategic planning enables companies to set performance goals and plan specific action steps to achieve them. Therefore, strategy is a sustainable competitive advantage for companies, which allows companies to act differently from others. Besides, strategy research on value creation suggests that corporate innovative actions may generate positive evaluations (Eberhart et al., 2004; Hellmann and Puri, 2000; Lee et al., 2000; Liao and Lin, 2017; Moran and Ghoshal, 1999). According to Moran and Ghoshal (1999), corporate innovation activities, such as introducing new products or services, may provide information to outsiders about the company's efforts and ability to combine resources in novel ways. Therefore, doing so is associated with companies' value creation. Similarly, Hellmann and Puri (2000) show that companies pursuing innovations are more likely to obtain venture capital financing than other high-tech start-ups. This finding implies that value is created when companies engage in innovation activities. Besides, investors expect that such activities can earn them future profits. A number of empirical studies show that these activities create value due to their positive association with stock market reaction (Eberhart et al., 2004; Lee et al., 2000; Liao and Lin, 2017). Given the value creation role and the competitive advantage of strategic activities, higher reputation companies have incentives to protect their

reputation through participating in strategy-related activities, and thus outperform their competitors.

Prior research show that information disclosure helps companies to enhance their reputation. Companies build their reputation through various forms of disclosure, including the financial reporting, structure, and conduct of the company (Epstein, 2011). Rindova and Fombrun (1999) demonstrate that companies carry out strategic projections in order to stimulate and improve the favourable interpretation of their investment. Strategic projections enhance the establishment of corporate reputations through communication to ensure that others make a favourable evaluation about the company. They allow companies to release more information about their strategic investment; thus, they help investors to make decisions. Whittington and Yakis-Douglas (2012) suggest that strategy communications play an active orientation role to the shaping of corporate reputations. They also indicate that new ventures and firms undertaking IPOs mainly communicate their strategy because they need investors and customers.

Based on the above discussion, reputation concerns may motivate reputable companies to act differently from other companies and to signal their efforts and ability to outsiders, and thus influence how outsiders evaluate the companies. Hence, reputable companies are encouraged to provide additional strategies-related information to the public. The first hypothesis is made as follows:

H1: Companies with higher reputations have greater incentives to provide strategic information disclosure.

5.2.2.2 CEO Reputation and Strategic Information Disclosure

Studies empirically examine the impact of top executives' reputation on a number of outcomes. Graffin et al. (2008) find a positive association between CEO reputation and compensation benefits. Jian and Lee (2011) show that CEO reputation positively

associated with wealth effects of corporate capital investments. Companies with more reputable CEOs receive more positive responses from the stock market following companies' announcements of capital investments.

In terms of voluntary disclosure, based on signalling theory, managers have an incentive to signal the market about their talent through voluntary disclosure (Campbell et al., 2001; Healy and Palepu; 2001; Trueman, 1986). However, several research on financial disclosure suggests a negative impact of CEO reputation on corporate disclosure. Francis et al. (2008) analyse how CEO's reputation affects corporate disclosure decisions (earnings quality). They indicate that there is a negative relationship between CEO reputation and earnings quality. This result occurs because more reputable CEOs tend to apply their discretion to manipulate earnings in order to manage market perceptions. Also, companies with a poor earnings quality have a high demand for reputable managers in order to improve their financial reporting quality. Later, Cao et al. (2012) find that CEO tenure is negatively affect financial reporting quality. They suggest that CEOs with longer tenure have more power and/or are more entrenched. With regard to the frequency or quantity of voluntary disclosure, Beyer and Dye (2012) indicate that managers who behave strategically (disclosing information only if it is in their self-interest) have incentives to disclose additional information if their reputation is at stake. Gibbons and Murphy (1992) show that short-tenured managers have strong career or reputation concerns because outsiders know little about their ability. Therefore, managers with shorter experience are encouraged to provide additional information to the public in order to increase the probability of receiving monetary and nonmonetary compensation; in contrast, managers with long tenure have less incentive to disclose additional information (Park and Yoo, 2016). Similarly, Bochkay et al. (2019) find that CEOs' tenure negatively associated with corporate forward-looking disclosure. Finally, strategic information disclosure practices will cause some bad impacts on the CEO's reputation which may reflect from the stock price (Whittington and Yakis-Douglas,

2012), [21] or may reflect from the funding denial due to investor-management disagreement (Agapova and Volkov, 2019; Thakor, 2015).

Compared with corporate reputation, Cao et al. (2012) indicate that the corporate reputation effect is likely a construct different from the reputation impacts of the auditor, the board, and the management as corporate reputation is a longer-term construct. However, the average tenure of CEOs is only 5 years. Therefore, reputable CEOs may have strong incentives to protect their own reputation and may adopt a conservative approach when they make disclosure decisions, since the costs of strategic information disclosure (bad impacts on CEO's reputation) may outweigh the benefits of disclosure (reducing information asymmetry) for reputable CEOs. As a result, reputable CEOs have disincentives to provide additional strategic information. Based on the above discussion, the second hypothesis is made as follows:

H2: CEOs with higher reputations are less likely to provide strategic information disclosure

5.2.2.3 The Joint Effect of Corporate and CEO Reputation

Research on reputation considers the concept of reputation to include two different dimensions: corporate reputation and CEO reputation. A number of studies provide comprehensive theoretical and empirical evidence that corporate reputation and CEO reputation separately affect companies' decisions (e.g., Beyer and Dye, 2012; Cao et al., 2012; Francis et al., 2008; Jian and Lee, 2011). However, these studies focus on the impact of one type of reputation on firms' outcomes. According to Boivie et al. (2016), the reputations of companies, CEOs, and analysts individually and jointly influence firms' specific outcomes. Therefore, based on the discussion of H1 and H2 of this study (corporate reputation and CEO reputation may individually and differently affect

[21] Whittington and Yakis-Douglas (2012) document an example of the negative effect of strategic information disclosure on stock price. Specifically, Nokia held a "strategy and finance briefing" on 11 February 2011. Stephen Elop (Nokia's CEO) announced their overall strategies for the company's future such as alliance with Microsoft. However, this strategic information disclosure caused Nokia's stock price to plummet by 7%.

corporate disclosure decisions), this study posits that the reputations of companies and CEOs also jointly influence corporate disclosure decisions.

Several studies consider the joint effect of multiple types of reputations on numerous outcomes and provide empirical evidence. Boivie et al. (2016) suggest that there are multiple forms of reputations that may influence an outcome; therefore, it is important to consider how different types of reputations might individually and/or interactively do so. Their empirical results show that changes in analyst recommendations made by star analysts had a greater impact on corporate stock prices than changes made by their less-renowned counterparts; companies led by star CEOs experiences less extreme market reactions to changes in analyst recommendations; the analyst reputation has a greater effect on stock market reaction than the reputations of the CEO and the company; analyst reputation moderates the impact of CEO reputation on stock market response. Weng and Chen (2017) investigate the effect of interaction between corporate reputation and CEO reputation on corporate financial performance. They find that corporate reputation and CEO reputation separately and positively influence corporate financial performance. Besides, CEO reputation positively influence corporate financial performance when corporate reputation is poor, implying that CEO reputation is more important to firm performance than corporate reputation.

Based on the above discussion, different actor's reputations interact with each other to influence specific outcomes because the audience, such as the market and investors, should be affected by each actor' reputation. By reviewing the literature, this study finds that studies examining the joint effect of different actors' reputations only focus on firms' outcomes. However, firms' decisions making are influenced by different parties, such as CEOs and the boards of directors (Bochkay et al., 2019; Pearce and Zahra, 1991). The board of directors may consider the corporate reputation rather than the CEO reputation when making decisions. In contrast, the CEO may be more concerned about their own reputation when making decisions. Therefore, corporate reputation and

CEO reputation may jointly affect corporate disclosure decisions. The third hypothesis is made as follows:

H3: Corporate reputation and CEO reputation jointly influence companies' strategic information disclosure decisions.

5.3. Research Design

5.3.1. Sample and Data

This study sample is composed of the non-financial companies listed in the S&P 500 index during the period from 2009 to 2018. Based on the availability of relevant data for this study, the final sample includes 2858 firm-year observations. The data source for strategic information disclosure is the Fair Disclosure Wire (FDW) database accessed through Lexis Nexis. I manually collect the transcripts of all press releases, conference calls, and conference presentations (excluding briefs) from the FDW database. Furthermore, following Agapova and Volkov (2019), this study uses the text analysis methodology which allows me to extract firms' strategic disclosure information from all transcripts. The corporate reputation data is collected from Fortune magazine. The CEO reputation data is derived from Compustat. The definitions of all variables used in this study and the data sources from which they are obtained are attached in the Appendix 3.

5.3.2. Variables

5.3.2.1 Strategic Information Disclosure

This study applied textual analysis to identify the quantity of corporate strategic information disclosure, unlike some studies that employ existing word lists to count the number of words (e.g., Tetlock, 2007 and Feldman et al., 2010) or use a disclosure index to perform manual content analysis of information disclosure (e.g., Eng and Mak, 2003 and Sánchez et al., 2011). This study follows Agapova and Volkov (2019) and uses their strategic indicator words list to examine the level of strategic information disclosed in

the releases of companies. The list includes words and word patterns, which indicates the possible existence of strategic information disclosure. Compared with other studies that use the disclosure index, the strategic indicator words list allows this study to extensively and intensively examine a large volume of textual data.

Following Agapova and Volkov (2019), based on their strategic indicator words list, the releases of companies containing strategic information are classified into the following seven categories: mergers and acquisition, research and development, consolidation, divestitures, cost control, move (offices, facilities), and growth (expansion). Next, this study develops a new coding scheme to assign strategic information disclosure scores (SID) to each disclosure category. Specifically, it assigned a score of 0 if the company made no strategic information disclosure in any category of releases mentioned above, 1 if the firm provided strategic information belonging to one of the categories, 2 if the firm provided strategic information belonging to two of the categories, and so on. As a result, the quantity of strategic information disclosure for a company is measured by the aggregate score obtained from each category in a given year, and the total score for each company ranges from 0 to 7.[22]

5.3.2.2 Corporate Reputation and CEO Reputation

Cao et al. (2012) define corporate reputation as an overall judgement made by the market about a company based on the evaluation of the company's financial, social and environmental effects during a period of time. Therefore, corporate reputation is affected by various aspects. Research on corporate reputation generally use the "America's Most Admired Companies" list to measure corporate reputation (see, for example, Cao et al., 2012, 2015; Erkens and Bonner, 2013; Philippe and Durand, 2011). The "America's Most Admired Companies" list determines the best-regarded companies based on evaluations from approximately 3700 executives, directors, and

[22] In this chapter, I only use the non-scaled (0-7) value of strategic information disclosure because the results are similar between the non-scaled value and the scaled value.

analysts of nine criteria, including investment value, management quality, product quality, social responsibility, innovation, financial soundness, wise use of company assets, and the ability to attract talent (Cao et al., 2015; Fortune, 2020b). Companies selected to the “America’s Most Admired Companies” list are ranked by their own company score in Fortune magazine. Therefore, this study uses both the “America’s Most Admired Companies” list (AMA_List) and companies scores (AMA_Score) to measure corporate reputation in my main analysis. Specifically, companies that appear on the " America’s Most Admired Companies in America" list are considered as reputable companies. AMA_List is a dummy variable of corporate reputation, and it takes a value of “1” if the firm appears in the List that year. AMA_Score measured as the firm’s score from the list in that year, and is set to 0 if the firm does not appear on the list. In addition, a higher company score indicates a higher corporate reputation.

Following Milbourn (2003), this study uses CEO tenure (CEO_Tenure) to measure CEO reputation. CEO_Tenure is calculated as the number of years the executive has been CEO of the company as of the compensation year in ExecuComp. A long CEO tenure suggests that the board of directors has a high evaluation of the CEO’s ability, because the CEO has survived a long-term assessment made by the board of directors (Jian and Lee, 2011; Milbourn, 2003). The second proxy for CEO reputation is measured by Best_CEO. This study categorizes CEOs according to their tenure (CEO_Tenure). Thus, this study considers that a CEO with tenure above the sample median is better than one with tenure below the sample median. Therefore, Best_CEO is a dummy variable of CEO reputation, and it takes a value of “1” if the CEO_Tenure above is the sample median, and 0 otherwise.

5.3.2.3 Control Variables

This study controlled for firm-specific, corporate governance, and product market competition factors. I controlled for the firm’s profitability (ROA), which was measured by the return on assets. I also controlled for leverage ratio (Lev), which is

considered as an important factor correlated with corporate voluntary information disclosure (Eng and Mak, 2003). Lev is measured by the debt to total assets ratio. I controlled for liquidity ratio, which was calculated as total current assets over total current liabilities. I also controlled for the firm's growth opportunities. Following Gul and Leung (2004), in the current study the variable of the firm's growth opportunities is measured by the price to earnings ratio (PE). I also included the market to book ratio (MTB) as a measure of the company's growth opportunities. I controlled for analysts following (Analyst), which was measured as the number of analysts following a company in a year. I also controlled for EBITDA/Sales (E/S), defined as earnings before interest, taxes, depreciation, and amortization, divided by total sales. According to Agapova and Volkov (2019), companies facing a higher level of financial constraint have incentives to disclose more strategic information in order to mitigate information asymmetry and the cost of capital. Therefore, I controlled for financial constraint (Fin Cons). Following Baños-Caballero et al. (2014), companies with a dividend payout ratio (calculated as dividends/net profit) above the sample median are less financially constrained. I controlled for corporate governance factors, including board size (BoardSize), calculated as the number of directors on the board for a company in a year; the number of board meetings (Meetings) for a firm in a year; managerial ownership (MOWN), measured as the percentage of ordinary shares held by the CEO and executive directors; and blockholder ownership (BLOCK) measured by the percentage of ordinary shares held by substantial shareholders who hold 5% or more of the company's ordinary shares. I also controlled for product market competition (HHI), because competition from existing competitors significantly influences corporate disclosure decisions (Huang et al., 2017; Li, 2010). Finally, this study employs year fixed effects and industry fixed effects in the main analysis and robustness analysis. Industry fixed effects are based on the two-digit SIC industry code. The definitions of all variables used in this study are provided in the Appendix 3.

5.3.3 Empirical Models

The first purpose of this study is to investigate how corporate reputation and CEO reputation individually influence corporate strategic information disclosure decisions. Therefore, the models used in my regression analyses are as follows:

$$\begin{aligned} SID_{it} = \alpha &+ \beta_1 AMA\_Score_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 Liquidity_{it} \\ &+ \beta_5 Analyst_{it} + \beta_6 PE_{it} + \beta_7 MTB_{it} + \beta_8 E/S_{it} \\ &+ \beta_9 Fin\ \ Cons_{it} + \beta_{10} BoardSize_{it} + \beta_{11} Meetings_{it} \\ &+ \beta_{12} MOWN_{it} + \beta_{13} BLOCK_{it} + \beta_{14} HHI_{it} + \text{Year Dummies} \\ &+ \text{Industry Dummies} + \varepsilon_{it} \end{aligned} \quad \text{(eq. 5.1)}$$

$$\begin{aligned} SID_{it} = \alpha &+ \beta_1 AMA\_List_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 Liquidity_{it} \\ &+ \beta_5 Analyst_{it} + \beta_6 PE_{it} + \beta_7 MTB_{it} + \beta_8 E/S_{it} \\ &+ \beta_9 Fin\ \ Cons_{it} + \beta_{10} BoardSize_{it} + \beta_{11} Meetings_{it} \\ &+ \beta_{12} MOWN_{it} + \beta_{13} BLOCK_{it} + \beta_{14} HHI_{it} + \text{Year Dummies} \\ &+ \text{Industry Dummies} + \varepsilon_{it} \end{aligned} \quad \text{(eq. 5.2)}$$

$$\begin{aligned} SID_{it} = \alpha &+ \beta_1 CEO\_Tenure_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 Liquidity_{it} \\ &+ \beta_5 Analyst_{it} + \beta_6 PE_{it} + \beta_7 MTB_{it} + \beta_8 E/S_{it} \\ &+ \beta_9 Fin\ \ Cons_{it} + \beta_{10} BoardSize_{it} + \beta_{11} Meetings_{it} \\ &+ \beta_{12} MOWN_{it} + \beta_{13} BLOCK_{it} + \beta_{14} HHI_{it} + \text{Year Dummies} \\ &+ \text{Industry Dummies} + \varepsilon_{it} \end{aligned} \quad \text{(eq. 5.3)}$$

$$\begin{aligned} SID_{it} = \alpha &+ \beta_1 Best\_CEO_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 Liquidity_{it} \\ &+ \beta_5 Analyst_{it} + \beta_6 PE_{it} + \beta_7 MTB_{it} + \beta_8 E/S_{it} \\ &+ \beta_9 Fin\ \ Cons_{it} + \beta_{10} BoardSize_{it} + \beta_{11} Meetings_{it} \\ &+ \beta_{12} MOWN_{it} + \beta_{13} BLOCK_{it} + \beta_{14} HHI_{it} + \text{Year Dummies} \\ &+ \text{Industry Dummies} + \varepsilon_{it} \end{aligned} \quad \text{(eq. 5.4)}$$

where SID_{it} is the volume of strategic information disclosed by a firm i in year t. AMA_Score_{it} is a measure for corporate reputation for a firm i in year t, defined as the firm's score from the "America's Most Admired Companies" list published in Fortune magazine. AMA_List_{it} is another proxy for corporate reputation for a firm i in year t. It is a dummy variable that equals 1 if the firm's name appears in the "America's Most Admired Companies" list that year. CEO_Tenure_{it} and $Best\_CEO_{it}$ are two proxies

for CEO reputation for a firm i in year t. The models include year fixed effects and industry fixed effects. Industry fixed effects are based on the two-digit SIC industry code.

The second objective of this study is to analyse how corporate reputation and CEO reputation jointly affect corporate strategic information disclosure decisions. Therefore, the models used in my regression analyses are as follows:

$$\begin{aligned} SID_{it} = \alpha &+ \beta_1 AMA\_Score_{it} + \beta_2 AMA\_Score_{it} * CEO\_Tenure_{it} \\ &+ \beta_3 CEO\_Tenure_{it} + \beta_4 ROA_{it} + \beta_5 Lev_{it} + \beta_6 Liquidity_{it} \\ &+ \beta_7 Analyst_{it} + \beta_8 PE_{it} + \beta_9 MTB_{it} + \beta_{10} E/S_{it} \\ &+ \beta_{11} Fin\ \ Cons_{it} + \beta_{12} BoardSize_{it} + \beta_{13} Meetings_{it} \\ &+ \beta_{14} MOWN_{it} + \beta_{15} BLOCK_{it} + \beta_{16} HHI_{it} + \text{Year Dummies} \\ &+ \text{Industry Dummies} + \varepsilon_{it} \end{aligned} \quad \text{(eq. 5.5)}$$

where $AMA\_Score_{it} * CEO\_Tenure_{it}$ is interaction term, which measure the joint effects of corporate reputation and CEO reputation on strategic information disclosure. All other variables are defined in the Appendix 3.

5.4. Empirical Results

5.4.1 Descriptive Statistics

Table 5.1 presents the descriptive statistics for the variables employed in the main analyses, including strategic information disclosure, corporate reputation, CEO reputation, and control variables. It can be observed that the minimum strategic information disclosure (SID) is 0, implying that such firms choose not to provide their strategies-related information to the public. However, the maximum SID is 7, which means that these firms disclose all categories of strategic information that are analysed in this study. The “America’s Most Admired Companies” list (AMA_List) and companies’ scores (AMA_Score) are two proxies of corporate reputation. Specifically, firms that appear on the "Most Admired Companies" list are considered reputable companies. In addition, a higher company score indicates a higher corporate reputation.

Table 5. 1 Descriptive statistics

Variable	Mean	Dev.	Min	Max	P25	P50	P75
SID	3.775	1.585	0.000	7.000	3.000	4.000	5.000
AMA_Score	2.580	3.264	0.000	8.800	0.000	0.000	6.380
AMA_List	0.389	0.488	0.000	1.000	0.000	0.000	1.000
AMA_Tenure	1.997	2.717	0.000	10.000	0.000	1.000	3.000
CEO_Tenure	7.212	6.062	0.330	55.556	3.000	5.611	9.616
ROA	0.067	0.078	–1.227	0.373	0.031	0.063	0.102
Lev	0.250	0.163	0.000	2.361	0.145	0.238	0.338
Liquidity	1.835	1.201	0.168	12.916	1.100	1.502	2.198
Analyst	19.296	7.431	1.000	54.667	14.083	18.500	23.750
PE	24.099	18.886	1.300	193.200	14.800	19.400	26.400
MTB	1.625	1.400	0.113	13.251	0.698	1.213	2.047
E/S	0.229	0.168	–3.433	0.740	0.138	0.215	0.312
Fin Cons	0.535	0.499	0.000	1.000	0.000	1.000	1.000
BoardSize	10.880	2.047	4.000	29.000	10.000	11.000	12.000
Meetings	7.880	3.249	2.000	43.000	6.000	7.000	8.000
MOWN	0.036	0.075	0.000	0.816	0.006	0.013	0.030
BLOCK	0.236	0.131	0.000	0.909	0.142	0.222	0.306
HHI	0.094	0.088	0.009	0.625	0.041	0.065	0.110

Note: This table reports the descriptive statistics for the variables used in the main analysis. The sample period is from 2009 to 2018. SID is strategic information disclosure score that takes the value 0 to 7. AMA_score is a proxy for corporate reputation, measured as the company's AMA score from the "America's Most Admired Companies" list in the year, and set to zero for non-AMA companies. AMA_list is a dummy variable of corporate reputation, and it takes a value of "1" if the company appears in the list that year. AMA_Tenure is a proxy for corporate long-term reputation, measured as the number of sample years to date during which the firm shows on the list. CEO_Tenure is a proxy for CEO reputation, measured as the number of years the executive has been CEO of the company as of the compensation year in ExecuComp. All other variables are defined in the Appendix 3.

It can be observed that the mean of AMA_List is 0.389, which means there are 39% of companies in my sample listed on "America's Most Admired Companies" and considered reputable firms. Following Cao et al. (2012), AMA_Tenure is measured as the number of sample years to date during which the firm appears on the "America's Most Admired Companies" list. Unlike other proxies of corporate reputation in this study (AMA_Score and AMA_List), AMA_Tenure captures the changes over time in corporate reputation, and the impacts of such changes on corporate strategic information disclosure decisions. It can be observed that, the mean of AMA_Tenure is 1.997, implying that each sample company has an average of 1.997 years on the "America's Most Admired Companies" list in my sample years (10 years). The lowest

AMA_Tenure is 0, which means these companies never appeared on the list from 2009 to 2018. The highest AMA_Tenure is 10, which means that these companies were on the list from 2009 to 2018. With respect to CEO reputation proxy, the mean of CEO_Tenure is 7.212, which means that CEOs of my sample firm have an average of 7.212 years in this position. The minimum CEO_Tenure is 0.330, suggesting that the CEO has less than one year in this position. However, the maximum CEO_Tenure is 55.556, which demonstrates a long career and also a high reputation.

5.4.2 Correlation Analyses

Table 5.2 presents the Pearson and Spearman correlation matrix of dependent and independent variables. Pearson's correlation coefficients are shown in the lower triangle while Spearman's rank correlations appear above the diagonal. Significant correlations at $p<0.1$ are in bold. As expected, the three measures of corporate reputation (AMA_Score, AMA_List, and AMA_Tenure) are highly and positively correlated with each other. In addition, strategic information disclosure (SID) is positively correlated with the three measures of corporate reputation (AMA_Score, AMA_List, and AMA_Tenure) respectively. The results show that reputable firms are more likely to provide additional strategic information. Also, table 5.2 indicates that SID is negatively correlated with CEO reputation (CEO_Tenure). This negative relationship implies that more reputable CEOs tend to disclose less strategic information to the public.

5.4.3 Multivariate Analyses

5.4.3.1 The Effect of Corporate Reputation on Strategic Information Disclosure

To explore the impacts of corporate reputation on strategic information disclosure, this study estimates equations (5.1) and ((5.2), and presents the results in Table 5.3. Columns (1) and (2) report the results of OLS regressions. Columns (3) and (4) report the results of ordered probit regressions. The dependent variable is strategic information

Table 5. 2 Correlation matrix

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
A SID	1	**0.107**	**0.120**	**0.133**	**–0.077**	**–0.050**	–0.014	–0.025	**0.069**	0.006	**–0.045**	0.001	0.041	**0.096**	**0.134**	**–0.093**	**–0.048**	**–0.047**
B AMA_Score	**0.120**	1	**0.961**	**0.772**	**0.069**	**0.107**	**–0.085**	**–0.083**	**0.303**	**–0.052**	**0.086**	**–0.112**	**0.132**	**0.237**	**–0.054**	**–0.114**	**–0.244**	**0.200**
C AMA_List	**0.124**	**0.992**	1	**0.791**	**0.069**	**0.085**	**–0.066**	**–0.093**	**0.279**	**–0.068**	**0.045**	**–0.131**	**0.130**	**0.226**	**–0.052**	**–0.097**	**–0.225**	**0.201**
D AMA_Tenure	**0.120**	**0.685**	**0.681**	1	0.031	**0.065**	0.010	**–0.149**	**0.319**	**–0.038**	**0.044**	**–0.117**	**0.203**	**0.252**	**–0.038**	**–0.158**	**–0.170**	**0.224**
E CEO_Tenure	**–0.069**	**0.056**	**0.054**	0.012	1	**0.064**	**–0.077**	**0.063**	**0.061**	**0.073**	**0.111**	0.004	**–0.087**	**–0.074**	**–0.092**	**0.231**	**0.047**	**0.039**
F ROA	**–0.038**	**0.081**	**0.074**	**0.072**	**0.091**	1	**–0.251**	**0.318**	**0.140**	**–0.112**	**0.678**	**0.208**	**–0.035**	**–0.112**	**–0.218**	**0.095**	**–0.059**	**0.169**
G Lev	–0.007	**–0.062**	**–0.054**	**0.049**	**–0.064**	**–0.138**	1	**–0.311**	**–0.212**	–0.022	**–0.277**	**0.162**	**0.170**	**0.153**	**0.105**	**–0.121**	**0.085**	**–0.047**
H Liquidity	**–0.043**	**–0.119**	**–0.124**	**–0.152**	**0.128**	**0.236**	**–0.224**	1	**0.074**	**0.081**	**0.395**	0.026	**–0.197**	**–0.226**	**–0.136**	**0.173**	**0.053**	**0.072**
I Analyst	**0.057**	**0.285**	**0.267**	**0.266**	**0.100**	**0.059**	**–0.196**	**0.099**	1	**0.074**	**0.286**	**0.083**	**–0.079**	–0.025	**–0.076**	**–0.035**	**–0.067**	**0.109**
J PE	**–0.053**	–0.008	–0.014	–0.011	**0.063**	**–0.115**	–0.016	–0.012	**0.078**	1	**0.404**	**0.098**	**–0.046**	**–0.115**	**–0.062**	**0.097**	**0.137**	**–0.106**
K MTB	**–0.055**	0.015	0.001	**0.035**	**0.167**	**0.458**	**–0.166**	**0.354**	**0.216**	**0.109**	1	**0.180**	**–0.073**	**–0.228**	**–0.251**	**0.174**	**0.055**	**0.083**
L E/S	0.010	**–0.084**	**–0.091**	**–0.059**	0.011	**0.447**	**0.094**	**0.108**	**0.066**	–0.027	**0.115**	1	**0.062**	**–0.047**	**0.072**	**–0.219**	**–0.127**	**–0.373**
M Fin Cons	**0.038**	**0.132**	**0.130**	**0.215**	**–0.083**	**0.042**	**0.140**	**–0.143**	**–0.091**	**–0.072**	**–0.111**	**0.058**	1	**0.251**	0.017	**–0.205**	**–0.163**	0.019
N BoardSize	**0.127**	**0.233**	**0.227**	**0.227**	**–0.086**	**–0.082**	**0.116**	**–0.237**	**–0.054**	**–0.058**	**–0.215**	–0.028	**0.229**	1	**0.128**	**–0.153**	**–0.163**	**0.079**
O Meetings	**0.081**	**–0.067**	**–0.064**	–0.032	**–0.083**	**–0.182**	**0.091**	**–0.102**	**–0.060**	0.003	**–0.192**	0.034	–0.008	**0.106**	1	**–0.197**	**–0.035**	**–0.118**
P MOWN	**–0.067**	0.009	0.010	**0.000**	**0.126**	**0.034**	–0.012	0.015	**0.055**	**0.065**	**0.035**	**–0.072**	**–0.058**	0.007	**–0.061**	1	**0.303**	**0.064**
Q BLOCK	**–0.052**	**–0.209**	**–0.199**	**–0.094**	**0.086**	**–0.067**	**0.090**	**0.043**	**–0.046**	**0.058**	**0.074**	**–0.100**	**–0.161**	**–0.129**	–0.007	**0.469**	1	–0.012
R HHI	**–0.051**	**0.148**	**0.152**	**0.189**	–0.007	**0.115**	–0.013	**–0.053**	**0.077**	–0.028	0.019	**–0.189**	**0.043**	**0.062**	**–0.111**	**0.064**	–0.019	1

Note: This table presents the Pearson and Spearman correlation coefficients for the main variables. The Pearson (Spearman) correlation coefficients are displayed blow (above) the diagonal. The sample period is from 2009 to 2018. All variables are defined in the Appendix 3. Significant correlation at $p<0.1$ are in bold.

disclosure (SID). AMA_score is a proxy for corporate reputation, measured as the company's AMA score from the "America's Most Admired Companies" list in the year, and set to zero for non-AMA companies. AMA_list is a dummy variable of corporate reputation, and it takes a value of "1" if the company appears in the "America's Most Admired Companies" list that year, and 0 otherwise.

In Column (1) AMA_score is significantly and positively related to SID (0.0181, t=1.82). The positive relationship implies that corporate reputation has a positive effect on strategic information disclosure. In Column (2), it can be observed that AMA_list is positively correlated with SID. The coefficient on AMA_list is 0.1418, and is significant at the 5% level, suggesting that reputable companies tend to provide a higher level of strategic information. These results also are economically significant. For instance, in Column (1), the coefficient of 0.0181 on AMA_Score implies that a one-standard deviation increase in corporate reputation is associated with a 1.56 % increase in strategic information disclosure; in Column (2), the coefficient of 0.1418 on AMA_List implies that a one-standard deviation increase in corporate reputation is associated with a 1.833 % increase in strategic information disclosure; In Columns (3) and (4), this study performs ordered probit regressions to test the relationship between corporate reputation and strategic information disclosure. The results are consistent with OLS regression results. The coefficient on AMA_score is 0.0161 (z=2.15), and is significant at the 5% level; and the coefficient on AMA_list is 0.1239 (z=2.50), and is significant at the 5% level. These results suggest that reputable companies tend to release more strategic information to the public.

A potential concern about the two proxies of corporate reputation (AMA_Score and AMA_List) is that they do not reflect the long-term nature and changes of corporate reputation. In order to capture these, this study follows Cao et al. (2012) and employ AMA_Tenure in my models. AMA_Tenure measured as the number of sample years to date during which the firm shows on the "America's Most Admired Companies" list.

Table 5. 3 The effect of corporate reputation on strategic information disclosure

	(1)	(2)	(3)	(4)
AMA_Score	0.0181*		0.0161**	
	(1.82)		(2.15)	
AMA_List		0.1418**		0.1239**
		(2.15)		(2.50)
ROA	–0.1947	–0.1957	–0.2975	–0.2975
	(–0.27)	(–0.28)	(–0.55)	(–0.55)
Lev	–0.3025	–0.3048	–0.2321	–0.2342*
	(–1.58)	(–1.59)	(–1.64)	(–1.65)
Liquidity	–0.0718***	–0.0708***	–0.0607***	–0.0600***
	(–2.63)	(–2.59)	(–3.00)	(–2.97)
Analyst	0.0121**	0.0119**	0.0091**	0.0090**
	(2.40)	(2.35)	(2.40)	(2.37)
PE	–0.0007**	–0.0007**	–0.0005*	–0.0005*
	(–2.00)	(–1.99)	(–1.82)	(–1.81)
MTB	–0.0800***	–0.0794***	–0.0656***	–0.0650***
	(–2.74)	(–2.71)	(–2.95)	(–2.93)
E/S	–0.4359	–0.4320	–0.3856	–0.3829
	(–1.19)	(–1.18)	(–1.44)	(–1.43)
Fin Cons	0.1714***	0.1697***	0.1433***	0.1421***
	(2.65)	(2.63)	(2.93)	(2.91)
BoardSize	0.0552***	0.0546***	0.0376***	0.0371***
	(3.14)	(3.11)	(2.92)	(2.89)
Meetings	0.0087	0.0087	0.0088	0.0088
	(0.92)	(0.92)	(1.27)	(1.27)
MOWN	0.0912	0.0829	0.1597	0.1534
	(0.22)	(0.20)	(0.51)	(0.49)
BLOCK	–0.2089	–0.1983	–0.1650	–0.1575
	(–0.78)	(–0.74)	(–0.83)	(–0.79)
HHI	0.1964	0.1899	0.2911	0.2863
	(0.18)	(0.17)	(0.36)	(0.35)
Constant	3.2164***	3.2182***		
	(7.40)	(7.40)		
cut1			–1.4049***	–1.4062***
			(–4.26)	(–4.27)
cut2			–1.1890***	–1.1902***
			(–3.62)	(–3.62)
cut3			–0.7029**	–0.7041**
			(–2.14)	(–2.15)
cut4			0.0674	0.0664
			(0.21)	(0.20)
cut5			0.9375***	0.9367***
			(2.86)	(2.86)
cut6			1.7501***	1.7497***
			(5.32)	(5.32)
cut7			2.7877***	2.7880***
			(8.36)	(8.36)
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Observations	2858	2858	2858	2858
Adj. R-sq	0.153	0.153		
Pseudo R-sq			0.054	0.054

Note: Table 5.3 presents the results from regressing strategic information disclosure on corporate reputation and control variables. The dependent variable is strategic information disclosure (SID). Models (1) and (2) report the results of OLS regressions. Models (3) and (4) report the results of ordered probit regressions. AMA_score is a proxy for corporate reputation, measured as the company's AMA score from the "America's Most Admired Companies" list in the year, and set to zero for non-AMA companies. AMA_list is a dummy variable of corporate reputation, and it takes a value of "1" if the company appears in the "America's Most Admired Companies" list that year. All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The t-statistics and z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Unlike other proxies of corporate reputation in this study, AMA_Tenure captures the changes over time in corporate reputation and the effect of such changes on corporate disclosure decisions (Cao et al., 2012). Therefore, this study examines the impact of changes in corporate reputation on strategic information disclosure, and present the results in Table 5.4. Column (1) reports the results of OLS regressions. Column (2) reports the results of ordered probit regressions. The dependent variable is strategic information disclosure (SID). As shown in Table 5.4, there is a significant and positive relationship between AMA_Tenure and SID. Specifically, the coefficient of AMA_Tenure is 0.0211 (t=1.68) in Column (1), and 0.0162 (z=1.69) in Column (2). These results suggest that companies with long-term reputation (companies with longer tenure on the "America's Most Admired Companies" list) tend to increase the quantity of strategic information disclosure. These results also are economically significant. For instance, in Column (1), the coefficient of 0.0211 on AMA_Tenure implies that a one-standard deviation increase in corporate long term reputation is associated with a 1.52 % increase in strategic information disclosure.

In sum, the results in Tables 5.3 and 5.4 support my hypothesis and suggest that companies with higher reputation tend to disclose more strategic information to the public. Corporate strategic activities are associated with their competitive advantages (Grant, 2003; Porter, 1996) and value creation (Eberhart et al., 2004; Hellmann and Puri, 2000; Lee et al., 2000; Liao and Lin, 2017; Moran and Ghoshal, 1999). Therefore, reputable companies tend to protect their reputation by providing additional strategies-related information to outsiders, because participating in strategic activities allows them to signal their efforts and ability and influence how outsiders evaluate the companies.

5.4.3.2 The Effect of CEO Reputation on Strategic Information Disclosure

To explore the impacts of CEO reputation on strategic information disclosure, this study estimates equations (5.3) and (5,4), and presents the results in Table 5.5. Columns (1)

Table 5. 4 The effect of changes in corporate reputation on strategic information disclosure

	(1)	(2)
AMA_Tenure	0.0211*	0.0162*
	(1.68)	(1.69)
ROA	–0.2405	–0.3271
	(–0.34)	(–0.61)
Lev	–0.3076	–0.2370*
	(–1.61)	(–1.68)
Liquidity	–0.0728***	–0.0622***
	(–2.68)	(–3.09)
Analyst	0.0127**	0.0099***
	(2.55)	(2.64)
PE	–0.0007**	–0.0005*
	(–2.03)	(–1.85)
MTB	–0.0786***	–0.0645***
	(–2.68)	(–2.89)
E/S	–0.4223	–0.3766
	(–1.15)	(–1.41)
Fin Cons	0.1628**	0.1385***
	(2.48)	(2.80)
BoardSize	0.0565***	0.0392***
	(3.25)	(3.09)
Meetings	0.0081	0.0083
	(0.86)	(1.20)
MOWN	0.0724	0.1501
	(0.18)	(0.48)
BLOCK	–0.2368	–0.1962
	(–0.89)	(–0.99)
HHI	0.1755	0.2801
	(0.16)	(0.34)
_cons	3.2519***	
	(7.42)	
cut1		–1.4268***
		(–4.30)
cut2		–1.2105***
		(–3.66)
cut3		–0.7240**
		(–2.20)
cut4		0.0465
		(0.14)
cut5		0.9162***
		(2.78)
cut6		1.7277***
		(5.22)
cut7		2.7639***
		(8.23)
Year FE	YES	YES
Industry FE	YES	YES
Observations	2858	2858
Adj. R-sq	0.152	
Pseudo R-sq		0.054

Note: Table 5.4 presents the results from regressing strategic information disclosure on changes in corporate reputation and control variables. The dependent variable is SID (strategic information disclosure). Model (1) reports the results of OLS regressions. Model (2) reports the results of ordered probit regressions. AMA_Tenure measured as the number of sample years to date during which the firm shows on the "America's Most Admired Companies" list. Unlike other proxies of corporate reputation in this paper, AMA_Tenure captures the changes over time in corporate reputation, and the effects of such changes on corporate strategic information disclosure decisions. All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The t-statistics and z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

and (2) report the results of OLS regressions. Columns (3) and (4) report the results of ordered probit regressions. The dependent variable is strategic information disclosure (SID). CEO_Tenure is a proxy for CEO reputation, measured as the number of years the executive has been CEO of the company as of the compensation year in ExecuComp. Best_CEO is a dummy variable of CEO reputation, and it takes value of "1" if the CEO has a long tenure in this position in the company (the CEO_Tenure above the sample median is considered as a reputable CEO), and 0 otherwise.

In Columns (1) and (3), it can be observed that CEO_Tenure is negatively correlated with SID. The coefficient on CEO_Tenure is –0.0176 (t=–4.08) and is significant at the 1% level in Column (1); and the coefficient on CEO_Tenure is –0.0124 (z=–3.89) and is significant at the 1% level in Column (3). These results show that CEO reputation negatively influence the quantity of strategic information disclosure. Similarly, in Columns (2) and (4), it can be observed that Best_CEO is negatively correlated with SID. The coefficient on Best_CEO is –0.2117 (t=–4.01) and is significant at the 1% level in Column (2); and the coefficient on Best_CEO is –0.1479 (z=–3.68) and is significant at the 1% level in Column (4). These results are consistent with Columns (1) and (3), implying that a reputable CEO tends to provide less strategic information. These results also are economically significant. For instance, in Column (1), the coefficient of –0.0176 on CEO_Tenure implies that a one-standard deviation increase in CEO reputation is associated with a 2.83 % decrease in strategic information disclosure.

In sum, the results in Table 5.5 support my hypothesis and suggest that reputable CEOs tend to provide less strategic information disclosure. The potential reason may be due to the negative effects of such disclosure, for example, investor-management disagreement (Agapova and Volkov, 2019; Thakor, 2015); a bad stock market reaction after a strategic information announcement by the company's CEO, and thus influence the CEO's reputation (Whittington and Yakis-Douglas, 2012). Besides, short-tenured

Table 5. 5 The effect of CEO reputation on strategic information disclosure

	(1)	(2)	(3)	(4)
CEO_Tenure	–0.0176***		–0.0124***	
	(–4.08)		(–3.89)	
Best_CEO		–0.2117***		–0.1479***
		(–4.01)		(–3.68)
ROA	–0.3865	–0.3344	–0.4207	–0.3829
	(–0.54)	(–0.47)	(–0.78)	(–0.71)
Lev	–0.3082	–0.3384*	–0.2379*	–0.2597*
	(–1.62)	(–1.77)	(–1.68)	(–1.83)
Liquidity	–0.0715***	–0.0767***	–0.0618***	–0.0653***
	(–2.64)	(–2.86)	(–3.07)	(–3.27)
Analyst	0.0153***	0.0151***	0.0118***	0.0116***
	(3.14)	(3.10)	(3.19)	(3.15)
PE	–0.0007**	–0.0007**	–0.0005*	–0.0005*
	(–2.00)	(–2.06)	(–1.83)	(–1.88)
MTB	–0.0634**	–0.0698**	–0.0541**	–0.0584***
	(–2.16)	(–2.38)	(–2.41)	(–2.61)
E/S	–0.4055	–0.3971	–0.3686	–0.3655
	(–1.11)	(–1.09)	(–1.38)	(–1.37)
Fin Cons	0.1887***	0.1848***	0.1588***	0.1562***
	(2.93)	(2.86)	(3.25)	(3.19)
BoardSize	0.0561***	0.0565***	0.0395***	0.0398***
	(3.31)	(3.33)	(3.17)	(3.19)
Meetings	0.0039	0.0045	0.0051	0.0056
	(0.41)	(0.48)	(0.74)	(0.81)
MOWN	0.2710	0.1944	0.2958	0.2396
	(0.66)	(0.48)	(0.95)	(0.78)
BLOCK	–0.3182	–0.3246	–0.2539	–0.2617
	(–1.21)	(–1.24)	(–1.29)	(–1.33)
HHI	0.3950	0.4793	0.4399	0.4988
	(0.36)	(0.44)	(0.54)	(0.61)
Constant	3.3428***	3.3374***		
	(7.77)	(7.76)		
cut1			–1.4963***	–1.4931***
			(–4.56)	(–4.55)
cut2			–1.2753***	–1.2722***
			(–3.90)	(–3.89)
cut3			–0.7872**	–0.7846**
			(–2.41)	(–2.41)
cut4			–0.0107	–0.0080
			(–0.03)	(–0.02)
cut5			0.8588***	0.8616***
			(2.63)	(2.64)
cut6			1.6734***	1.6761***
			(5.11)	(5.12)
cut7			2.7196***	2.7220***
			(8.17)	(8.18)
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Observations	2834	2834	2834	2834
Adj. R-sq	0.157	0.157		
Pseudo R-sq			0.055	0.055

Note: Table 5.5 presents the results from regressing strategic information disclosure on CEO reputation and control variables. The dependent variable is SID (strategic information disclosure). Models (1) and (2) report the results of OLS regressions. Models (3) and (4) report the results of ordered probit regressions. Models (1) and (3) report the regression results of the impacts of CEO reputation (CEO_Tenure) on strategic information disclosure. CEO_Tenure is a proxy for CEO reputation, measured as the number of years the executive has been CEO of the company as of the compensation year in ExecuComp. Models (2) and (4) report the regression results of the impacts of CEO reputation (Best_CEO) on strategic information disclosure. Best_CEO is a dummy variable of CEO reputation, and it takes value of "1" if the CEO_Tenure above the sample median. All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The t-statistics and z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

managers are with strong career or reputation concerns because the outsiders know little about their ability, thus, managers with long tenure have less incentive to disclose additional information (Bochkay et al., 2019; Gibbons and Murphy,1992; Park and Yoo, 2016). Based on these reasons, reputable CEOs have strong incentives to protect their own reputation and adopt a conservative approach when they make disclosure decisions, since the costs of strategic information disclosure (bad impacts on CEO's reputation) may outweigh the benefits of disclosure (reducing information asymmetry) for reputable CEOs. As a result, reputable CEOs have disincentives to provide additional strategic information.

5.4.3.3 Conditional Analysis of the High and Low Corporate/CEO Reputation Subsamples.

In this section, this study performs a subsample analysis similar to that reported in Tables 5.3, 5.4, and 5.5 but adjusts the model specification to different scenarios. The subsample analysis consists of three parts. First, I test the impact of corporate reputation (AMA_Score) on strategic information disclosure conditional on good and poor CEO reputation, respectively. Second, I test the effect of long-term corporate reputation (AMA_Tenure) on strategic information disclosure conditional on good and poor CEO reputation, respectively. Third, I test the influence of CEO reputation (CEO_Tenure) on strategic information disclosure conditional on good and poor corporate reputation, respectively. The results allow this study to compare the different impacts of corporate reputation and CEO reputation on strategic information disclosure. For this purpose, the entire sample of this study is divided into different subsamples based on the different conditions.

Columns (1) and (3) in Table 5.6 present the results for the "good CEO reputation" subgroups measured by Best_CEO. Best_CEO is a dummy variable of CEO reputation, and it takes value of "1" if the CEO has a long tenure in this position in the company (the CEO_Tenure above the sample median is considered as a reputable CEO), and 0

otherwise. The results show that the coefficients on AMA_Score and AMA_Tenure are insignificant, implying that the role of corporate reputation in corporate disclosure decisions is negligible when the company is led by a reputable CEO. In other words, when the firm's CEO has a good reputation, a good corporate reputation is not necessarily relevant and influential to the firm's decisions making.

Columns (2) and (4) in Table 5.6 present the results for the "poor CEO reputation" subgroup measured by Best_CEO. The results show that the coefficients on AMA_Score and AMA_Tenure are positive and significant at the 5% level, implying that reputable companies tend to disclose more strategic information when they are led by CEOs with poor reputation. These results also are economically significant. For instance, in Column (2), the coefficient of 0.0250 on AMA_Score implies that a one-standard deviation increase in corporate reputation is associated with a 2.16% increase in strategic information disclosure when companies are led by CEOs with poor reputation; in Column (4), the coefficient of 0.0309 on AMA_Tenure implies that a one-standard deviation increase in corporate long term reputation is associated with a 2.22% increase in strategic information disclosure when companies are led by CEOs with poor reputation. The potential economic interpretation for this positive effect is that companies have incentives to mitigate the negative impacts of the poor CEO reputation through strategic information disclosure, as strategic information disclosure can to some degree alleviate information asymmetry and a firm's cost of capital (Lu and Tucker, 2012; Thakor, 2015), and in addition, it is helpful for companies to provide strategic information to gain the support of shareholders and analysts (Whittington and Yakis-Douglas, 2012).

Next, I focus on the effect of CEO reputation on strategic information disclosure in different scenarios of corporate reputation. Columns (5) and (6) in Table 5.6 present the results for the "good corporate reputation" and "poor corporate reputation" subgroups measured by AMA_list. AMA_list is a dummy variable of corporate reputation, and it

takes a value of "1" if the company appears in the "America's Most Admired Companies" list that year, and 0 otherwise. The results show that the coefficients on CEO_Tenure are negative and significant, suggesting that reputable CEOs in companies with good or poor reputation, tend to adopt a conservative approach, encouraging less strategic information disclosure. These results also are economically significant. For instance, in Column (5), the coefficient of –0.0182 on CEO_Tenure implies that a one-standard deviation increase in CEO reputation is associated with a 2.92% decrease in strategic information disclosure for companies with good reputation; in Column (6), the coefficient of –0.0096 on CEO_Tenure implies that a one-standard deviation increase in CEO reputation is associated with a 1.54% decrease in strategic information disclosure for companies with poor reputation. The potential economic interpretation is that reputable CEOs have incentives to protect their own reputation, as strategic information disclosure is sometimes costly. Studies provide evidence that strategic information disclosure could lead to negative stock market reactions (Whittington and Yakis-Douglas; 2012) and investor-management disagreement (Agapova and Volkov, 2019; Thakor, 2015). Furthermore, reputable CEOs with long tenure are associated with less investors' uncertainty about managers' ability and firms' future performance, which results in decreased information demand and fewer CEOs' career concerns, and thus, giving disincentives to reputable CEOs to provide additional strategic information (Bochkay et al., 2019).

Compared with Columns (1), (2), (3), and (4) in Table 5.6, the results of Columns (5) and (6) in Table 5.6 suggest that the overall effect of CEO reputation is stronger than the impact of corporate reputation on strategic information disclosure, implying that when we consider the effect of corporate reputation and CEO reputation on companies' decisions making at the same time, CEO reputation appears to be a more important factor for influencing companies' disclosure decisions.

Table 5. 6 Conditional analysis of the high and low corporate/CEO reputation subsamples.

	Good CEO reputation subsample	Poor CEO reputation subsample	Good CEO reputation subsample	Poor CEO reputation subsample	Good corporate reputation subsample	Poor corporate reputation subsample
	(1)	(2)	(3)	(4)	(5)	(6)
AMA_Score	0.0106	0.0250**				
	(1.01)	(2.26)				
AMA_Tenure			0.0070	0.0309**		
			(0.51)	(2.21)		
CEO_Tenure					–0.0182***	–0.0096**
					(–3.65)	(–2.22)
ROA	–0.4480	–0.3806	–0.4552	–0.4741	–0.3924	–0.9270
	(–0.61)	(–0.47)	(–0.62)	(–0.58)	(–0.41)	(–1.36)
Lev	–0.1024	–0.3765**	–0.1028	–0.4000**	–0.1003	–0.3124
	(–0.43)	(–2.06)	(–0.43)	(–2.19)	(–0.44)	(–1.61)
Liquidity	–0.0784***	–0.0374	–0.0793***	–0.0418	–0.1402***	–0.0484*
	(–2.96)	(–1.19)	(–2.99)	(–1.34)	(–3.91)	(–1.92)
Analyst	0.0143***	0.0024	0.0152***	0.0026	0.0092	0.0098*
	(2.66)	(0.43)	(2.89)	(0.46)	(1.55)	(1.91)
PE	–0.0007*	0.0000	–0.0007*	–0.0000	–0.0021***	0.0001
	(–1.82)	(0.03)	(–1.81)	(–0.10)	(–3.23)	(0.23)
MTB	–0.0340	–0.0778**	–0.0336	–0.0741*	–0.0621	–0.0372
	(–1.20)	(–2.06)	(–1.18)	(–1.95)	(–1.44)	(–1.37)
E/S	–0.4186	–0.2030	–0.4206	–0.1724	0.5383	–0.5794*
	(–1.09)	(–0.51)	(–1.09)	(–0.44)	(0.89)	(–1.89)
Fin Cons	0.1252*	0.1449**	0.1241*	0.1320*	0.1174	0.1296**
	(1.77)	(2.07)	(1.73)	(1.85)	(1.45)	(1.96)
BoardSize	0.0384**	0.0329*	0.0403**	0.0336*	0.0587***	0.0212
	(2.05)	(1.79)	(2.18)	(1.84)	(2.79)	(1.29)
Meetings	0.0268**	–0.0168*	0.0265**	–0.0174*	0.0219*	–0.0007
	(2.48)	(–1.83)	(2.45)	(–1.90)	(1.86)	(–0.08)
MOWN	0.0086	0.6215	0.0249	0.5797	0.1563	0.4351
	(0.02)	(1.23)	(0.06)	(1.14)	(0.28)	(1.08)
BLOCK	–0.3481	–0.0572	–0.3804	–0.0955	0.2296	–0.5843**
	(–1.19)	(–0.20)	(–1.31)	(–0.34)	(0.62)	(–2.33)
HHI	0.5243	0.9624	0.5511	0.8346	–1.0553	1.6056*
	(0.42)	(0.80)	(0.45)	(0.69)	(–0.60)	(1.71)
cut1	–0.9732**	–2.0875***	–0.9671**	–2.1653***	–1.7675**	–1.5647***
	(–2.06)	(–4.47)	(–2.05)	(–4.60)	(–2.27)	(–4.17)
cut2	–0.7582	–1.8414***	–0.7519	–1.9187***	–1.5004*	–1.3478***
	(–1.60)	(–3.97)	(–1.59)	(–4.11)	(–1.94)	(–3.58)
cut3	–0.2950	–1.2925***	–0.2883	–1.3695***	–0.9929	–0.8368**
	(–0.63)	(–2.81)	(–0.61)	(–2.95)	(–1.28)	(–2.23)
cut4	0.4921	–0.5015	0.4989	–0.5777	–0.1686	–0.0534
	(1.04)	(–1.09)	(1.06)	(–1.25)	(–0.22)	(–0.14)
cut5	1.3487***	0.4090	1.3552***	0.3328	0.7422	0.8204**
	(2.86)	(0.89)	(2.88)	(0.72)	(0.95)	(2.18)
cut6	2.1564***	1.2573***	2.1621***	1.1796**	1.5333**	1.6894***
	(4.56)	(2.73)	(4.58)	(2.54)	(1.97)	(4.48)
cut7	3.1454***	2.4063***	3.1498***	2.3280***	2.7018***	2.6367***
	(6.53)	(5.17)	(6.54)	(4.97)	(3.43)	(6.87)
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Observations	1481	1353	1481	1353	1211	1623
Pseudo R-sq	0.066	0.057	0.066	0.057	0.090	0.047

Note: Table 5.6 reports the results from conditional analysis of the high and low corporate/CEO reputation subsamples. The dependent variable is SID (strategic information disclosure). Models (1) and (2) report the results of ordered probit regressions results of the impact of corporate reputation (AMA_Score) on strategic information disclosure conditional on good and poor CEO reputation, respectively. AMA_score is a proxy for corporate reputation, measured as the company's AMA score from the "America's Most Admired Companies" list in the year, and set to zero for non-AMA companies. Models (3) and (4) report the results of ordered probit regressions results of the effect of long-term corporate reputation (AMA_Tenure) on strategic information disclosure conditional on good and poor CEO reputation, respectively. AMA_Tenure measured as the number of sample years to date during which the company shows on the "America's Most Admired Companies" list. Models (5) and (6) report the results of ordered probit regressions results of the influence of CEO reputation (CEO_Tenure) on strategic information disclosure conditional on good and poor corporate reputation, respectively. CEO_Tenure is a proxy for CEO reputation, measured as the number of years the executive has been CEO of the company as of the compensation year in ExecuComp. Models (1) and (3) present the results for the "good CEO reputation" subgroups measured by CEO_Tenure. CEO_Tenure above the sample median is considered as a reputable CEO, and 0 otherwise. Models (2) and (4) present the results for the "poor CEO reputation" subgroup measured by CEO_Tenure. Models (5) and (6) present the results for the "good corporate reputation" and "poor corporate reputation" subgroups measured by AMA_list. AMA_list is a dummy variable of corporate reputation, and it takes a value of "1" if the company appears in the "America's Most Admired Companies" list that year, and 0 otherwise. All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

In sum, the results in Table 5.6 present a clear picture about the roles of corporate reputation and CEO reputation in companies' disclosure decisions making. Corporate reputation positively influences strategic information disclosure when they are led by CEOs with poor reputation only; however, CEO reputation consistently reduces the quantity of strategic information disclosure in both companies with good and poor corporate reputation. The findings suggest that, first, when the firm's CEO has a good reputation, the corporate reputation is not necessarily relevant and influential to the firm's decisions making; however, reputable companies led by CEOs with poor reputation have incentives to mitigate the negative impacts of the poor CEO reputation through strategic information disclosure, as strategic information disclosure can to some degree alleviate information asymmetry and a firm's cost of capital (Lu and Tucker, 2012; Thakor, 2015), and gain the support of shareholders and analysts (Whittington and Yakis-Douglas, 2012). Second, CEOs in companies with good or poor reputation, tend to adopt a conservative approach, encouraging less strategic information disclosure. The potential economic explanation is that the costs of strategic information disclosure (bad impacts on CEO's reputation) outweigh the benefits of disclosure (reducing information asymmetry) for reputable CEOs. Specifically, reputable CEOs have incentives to protect their own reputation, as strategic information disclosure may lead to bad impacts on CEO reputation, for example, negative stock market reactions (Whittington and Yakis-Douglas; 2012) and investor-management disagreement (Agapova and Volkov, 2019; Thakor, 2015). Besides, less investors' uncertainty about managers' ability and firm's future performance are associated with decreased investors' information demand and fewer CEOs' career concerns, thus, reputable CEOs have less incentive to disclose strategic information (Bochkay et al., 2019). Based on these findings, this study concludes that the effect of CEO reputation on firms' disclosure decisions making is stronger than the impact of corporate reputation.

5.4.3.4 The Joint Effect of Corporate Reputation and CEO Reputation

To further explore the joint effect between corporate reputation and CEO reputation, this study estimates equation (5.5) and presents the results in Table 5.7. Columns (1) and (2) report the results of OLS regressions. Columns (3) and (4) report the results of ordered probit regressions. The dependent variable is strategic information disclosure (SID). AMA_Score*CEO_Tenure and AMA_Tenure*CEO_Tenure are interaction terms.

In Column (1), the interaction term is AMA_Score*CEO_Tenure. The coefficient on AMA_Score*CEO_Tenure is –0.0034 (t=–2.65), and is statistically significant at the 1% level. The negative coefficient suggests that CEO reputation moderates the positive impact of corporate reputation on the quantity of strategic information disclosure. In Column (2), the interaction term is AMA_Tenure*CEO_Tenure, which examines the joint effect between corporate long-term reputation and CEO reputation on strategic information disclosure. The coefficient of AMA_Tenure*CEO_Tenure is –0.0058 (t=–3.70), and is significant at the 1% level, suggesting that corporate long-term reputation and CEO reputation interact to reduce the quantity of strategic information disclosure. Columns (3) and (4) report the results of ordered probit regressions, which are consistent with OLS regressions results. Based on the results of Table 5.7, it can be concluded that, CEO reputation moderates the positive impact of corporate reputation on corporate strategic information disclosure.

Table 5. 7 The joint effect of corporate and CEO reputation on strategic information disclosure

	(1)	(2)	(3)	(4)
AMA_Score	0.0455***		0.0359***	
	(3.46)		(3.60)	
AMA_Score*CEO_Tenure	–0.0034***		–0.0025***	
	(–2.65)		(–2.60)	
AMA_Tenure		0.0664***		0.0488***
		(4.11)		(3.92)
AMA_Tenure*CEO_Tenure		–0.0058***		–0.0042***
		(–3.70)		(–3.58)
CEO_Tenure	–0.0078	–0.0063	–0.0054	–0.0043
	(–1.38)	(–1.20)	(–1.27)	(–1.10)
ROA	–0.4594	–0.4725	–0.4839	–0.4863
	(–0.65)	(–0.67)	(–0.89)	(–0.90)
Lev	–0.2763	–0.3002	–0.2136	–0.2328*
	(–1.45)	(–1.60)	(–1.51)	(–1.66)
Liquidity	–0.0649**	–0.0688**	–0.0562***	–0.0596***
	(–2.37)	(–2.53)	(–2.76)	(–2.94)
Analyst	0.0128**	0.0129***	0.0096**	0.0100***
	(2.51)	(2.59)	(2.48)	(2.63)
PE	–0.0006*	–0.0006**	–0.0005*	–0.0005*
	(–1.95)	(–1.97)	(–1.78)	(–1.80)
MTB	–0.0640**	–0.0631**	–0.0548**	–0.0541**
	(–2.18)	(–2.15)	(–2.44)	(–2.41)
E/S	–0.4253	–0.4403	–0.3802	–0.3932
	(–1.18)	(–1.22)	(–1.43)	(–1.48)
Fin Cons	0.1658**	0.1583**	0.1404***	0.1363***
	(2.57)	(2.42)	(2.86)	(2.74)
BoardSize	0.0506***	0.0503***	0.0347***	0.0352***
	(2.89)	(2.92)	(2.70)	(2.77)
Meetings	0.0044	0.0035	0.0056	0.0049
	(0.47)	(0.38)	(0.81)	(0.71)
MOWN	0.2686	0.2278	0.2897	0.2603
	(0.65)	(0.55)	(0.93)	(0.83)
BLOCK	–0.2669	–0.3141	–0.2024	–0.2479
	(–1.00)	(–1.19)	(–1.01)	(–1.25)
HHI	0.3203	0.3930	0.3796	0.4294
	(0.29)	(0.36)	(0.46)	(0.53)
Constant	3.3429***	3.4200***		
	(7.70)	(7.87)		
cut1			–1.5080***	–1.5644***
			(–4.55)	(–4.72)
cut2			–1.2866***	–1.3425***
			(–3.89)	(–4.05)
cut3			–0.7973**	–0.8517***
			(–2.42)	(–2.58)
cut4			–0.0193	–0.0724
			(–0.06)	(–0.22)
cut5			0.8519***	0.7993**
			(2.58)	(2.42)
cut6			1.6692***	1.6154***
			(5.04)	(4.87)
cut7			2.7190***	2.6642***
			(8.08)	(7.92)
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Observations	2834	2834	2834	2834
Adj. R-sq	0.160	0.161		
Pseudo R-sq			0.057	0.057

Note: This table shows the results of the joint effect of corporate reputation and CEO reputation on strategic information disclosure. AMA_Score*CEO_Tenure and AMA_Tenure*CEO_Tenure are interaction terms. The dependent variable is SID (strategic information disclosure). Models (1) and (2) report the results of OLS regressions. Models (3) and (4) report the results of ordered probit regressions. All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The t-statistics and z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

5.4.4 Robustness Analyses

5.4.4.1 The Heckman Two-stage Analysis

A potential concern is the endogenous problem of the "America's Most Admired Companies" list and companies scores (Cao et al., 2012). There are some common factors that may lead to both a good corporate reputation and an increased level of disclosure. Therefore, to address the problem of endogeneity, this study conducts the Heckman two-stage analysis to confirm the validity of my previous conclusions.

In the first stage regression (not reported), this study uses a probit model to estimate the probability of being selected to the "America's Most Admired Companies" list. In this model, I include all variables used in my previous tests (except product market competition), which are likely to increase the possibility that a firm is selected to the "America's Most Admired Companies" list. Inspired by Cao et al. (2012), I choose two additional instrumental variables (advertising expenses and the number of employees), which are exogenous with corporate reputation. In order to confirm that advertising expenses and the number of employees do not influence strategic information disclosure, I follow Cao et al. (2012) to regress the residual (obtained from a regressions of the strategic information disclosure on all exogenous variables) on advertising expenses and the number of employees. The results show that the two instrumental variables are insignificant with the residual, implying that advertising expenses and the number of employees are not linked to corporate strategic information disclosure decisions. In addition, the results also show that advertising expenses and the number of employees are significantly correlated with corporate reputation (AMA_Score and AMA_List). Finally, the probit model fits well, with a pseudo R2 of 28 percent and an area under the receiver operating characteristic (ROC) curve of 83.

The second-stage regressions, ordered probit regressions (Columns (1) and (2)) and ordered logistic regressions (Columns (3) and (4)) include the Inverse Mills ratio

obtained from the first-stage regression. Table 5.8 reports the Heckman two-stage regression results, again confirming that the previous conclusions still hold up fairly well after controlling for the problem of endogeneity. It can be observed that the coefficients of corporate reputation (AMA_Score and AMA_List) remain significant and positive. The results again confirm that companies with higher reputation tend to release more strategic information to the public. Finally, the Inverse Mills ratio (IMR) is insignificant, implying that self-selection bias is not a significant problem in my model.

5.4.4.2 The Effect of Corporate Reputation (alternative proxies) on Strategic Information Disclosure

For robustness check purposes, this study employs alternative proxies of corporate reputation. Fortune magazine generates a Fortune 500 list and a rank for firms that are incorporated in US and operate in US. Firms are ranked by total revenues for their respective fiscal years (Fortune, 2020a). Therefore, I employ the Fortune 500 list (Fortune500) and rank (LnRank) to measure corporate reputation. Fortune500 is a dummy variable of corporate reputation, and it takes a value of "1" if the firm appeared on the Fortune 500 list that year. LnRank represents the natural logarithm of the Fortune 500 rank. I only examine companies that appeared on the Fortune 500 list. Therefore, LnRank is set as a missing variable if the company does not appear on the list in that year. In addition, a smaller LnRank indicates a higher corporate reputation; for example, if a firm is ranked as number one in a particular year, it means that the firm is the most reputable company in that year.

Table 5.9 presents the results of the regression of strategic information disclosure (SID) on corporate reputation. Columns (1) and (2) report the results of OLS regressions. Columns (3) and (4) report the results of ordered probit regressions. The dependent variable is strategic information disclosure (SID). It can be observed that, the

Table 5. 8 The Heckman two-stage analysis

	(1)	(2)	(3)	(4)
AMA_Score	0.0305**		0.0395*	
	(2.35)		(1.82)	
AMA_List		0.2231***		0.2993**
		(2.65)		(2.12)
CEO_Tenure	–0.0249***	–0.0250***	–0.0430***	–0.0431***
	(–5.63)	(–5.64)	(–5.19)	(–5.19)
ROA	–1.2086	–1.1969	–1.7162	–1.7043
	(–1.47)	(–1.46)	(–1.10)	(–1.09)
Lev	–0.5175**	–0.5237***	–0.8849**	–0.8918**
	(–2.56)	(–2.59)	(–2.25)	(–2.27)
Liquidity	–0.0790**	–0.0789**	–0.1345**	–0.1343**
	(–2.44)	(–2.45)	(–2.24)	(–2.24)
Analyst	0.0121	0.0126	0.0131	0.0139
	(1.41)	(1.47)	(0.81)	(0.86)
PE	–0.0015	–0.0015	–0.0031**	–0.0030**
	(–1.61)	(–1.60)	(–2.04)	(–2.03)
MTB	–0.0214	–0.0206	–0.0614	–0.0601
	(–0.65)	(–0.62)	(–1.00)	(–0.98)
E/S	–0.1614	–0.1639	–0.3011	–0.3099
	(–0.36)	(–0.36)	(–0.36)	(–0.37)
Fin Cons	0.1857**	0.1871**	0.2594	0.2638*
	(2.04)	(2.06)	(1.63)	(1.66)
BoardSize	0.0598**	0.0604**	0.0896**	0.0904**
	(2.55)	(2.57)	(2.16)	(2.18)
Meetings	0.0040	0.0037	0.0349	0.0344
	(0.29)	(0.27)	(1.53)	(1.50)
MOWN	0.8692**	0.8795**	1.6735**	1.6877**
	(2.08)	(2.10)	(2.24)	(2.26)
BLOCK	–1.0760**	–1.0939**	–1.6943**	–1.7225**
	(–2.49)	(–2.53)	(–2.17)	(–2.20)
HHI	–1.0534	–1.0598	–0.9559	–0.9634
	(–1.04)	(–1.05)	(–0.56)	(–0.57)
IMR	0.1901	0.2016	0.0607	0.0838
	(0.89)	(0.95)	(0.17)	(0.23)
cut1	–0.5165	–0.4993	–0.6605	–0.6290
	(–0.52)	(–0.50)	(–0.27)	(–0.26)
cut2	–0.2880	–0.2704	–0.1689	–0.1372
	(–0.29)	(–0.27)	(–0.07)	(–0.06)
cut3	0.2110	0.2291	0.8056	0.8374
	(0.21)	(0.23)	(0.33)	(0.35)
cut4	1.0452	1.0638	2.2726	2.3049
	(1.04)	(1.06)	(0.94)	(0.95)
cut5	1.9446*	1.9637*	3.7865	3.8196
	(1.94)	(1.95)	(1.56)	(1.58)
cut6	2.7882***	2.8077***	5.2848**	5.3186**
	(2.78)	(2.80)	(2.18)	(2.19)
cut7	3.9562***	3.9764***	7.6940***	7.7290***
	(3.95)	(3.97)	(3.17)	(3.18)
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Observations	1219	1219	1219	1219
Pseudo R-sq	0.085	0.086	0.091	0.091

Note: This table shows the Heckman two-stage analysis results from regressing strategic information disclosure (SID) on corporate reputation (AMA_Score and AMA_List) and control variables. This table only presents the results from the second stage regression of the Heckman test. In the first stage, the AMA indicator is regressed on all control variables except product market competition and two additional instrumental variables (advertising expenses and the number of employees). The second-stage regressions, ordered probit regressions (Models (1) and (2)) and ordered logistic regressions (Models (3) and (4)) include the Inverse Mills ratio (IMR) obtained from the first-stage regression. The dependent variable is SID (strategic information disclosure). All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

Table 5. 9 The effects of corporate reputation (alternative proxies) on strategic information disclosure

	(1)	(2)	(3)	(4)
Fortune500	0.2710***		0.1984***	
	(3.35)		(3.363)	
LnRank		–0.0006**		–0.0005**
		(–1.99)		(–1.978)
ROA	–0.4555	0.9756	–0.4765	0.4743
	(–0.63)	(1.18)	(–0.874)	(0.698)
Lev	–0.3452*	–0.4279*	–0.2656*	–0.3696**
	(–1.80)	(–1.91)	(–1.869)	(–2.061)
Liquidity	–0.0632**	–0.0851**	–0.0555***	–0.0709**
	(–2.29)	(–2.16)	(–2.712)	(–2.385)
Analyst	0.0100**	–0.0026	0.0080**	–0.0016
	(1.97)	(–0.39)	(2.081)	(–0.314)
PE	–0.0007**	–0.0009***	–0.0005*	–0.0009**
	(–1.98)	(–2.90)	(–1.818)	(–2.133)
MTB	–0.0597**	–0.0745*	–0.0507**	–0.0655*
	(–1.99)	(–1.66)	(–2.237)	(–1.820)
E/S	–0.2696	–0.5688	–0.2674	–0.4208
	(–0.73)	(–1.25)	(–0.991)	(–1.186)
Fin Cons	0.1655**	0.2162***	0.1417***	0.1850***
	(2.56)	(2.84)	(2.906)	(3.059)
BoardSize	0.0491***	0.0641***	0.0341***	0.0465***
	(2.79)	(3.21)	(2.657)	(3.038)
Meetings	0.0083	0.0139	0.0084	0.0117
	(0.89)	(1.36)	(1.222)	(1.440)
MOWN	0.0710	–0.3626	0.1500	–0.1684
	(0.17)	(–0.79)	(0.479)	(–0.461)
BLOCK	–0.1204	0.3082	–0.1155	0.2054
	(–0.45)	(0.96)	(–0.584)	(0.807)
HHI	0.2103	0.7734	0.3082	0.5365
	(0.19)	(0.52)	(0.378)	(0.475)
Constant	3.0447***	3.2695***		
	(7.07)	(5.59)		
cut1			–1.2768***	–1.5370***
			(–3.901)	(–3.366)
cut2			–1.0598***	–1.3208***
			(–3.246)	(–2.903)
cut3			–0.5715*	–0.8172*
			(–1.758)	(–1.804)
cut4			0.2011	–0.0041
			(0.619)	(–0.009)
cut5			1.0719***	0.9133**
			(3.297)	(2.019)
cut6			1.8841***	1.7222***
			(5.778)	(3.804)
cut7			2.9231***	2.7566***
			(8.838)	(6.036)
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Observations	2858	1967	2858	1967
Adj. R-sq	0.156	0.178		
Pseudo R-sq			0.055	0.064

Note: Table 5.9 reports the results from regressing strategic information disclosure on corporate reputation (alternative proxies) and control variables. The dependent variable is SID (strategic information disclosure). Models (1) and (2) report the results of OLS regressions. Models (3) and (4) report the results of ordered probit regressions. Fortune500 is a dummy variable of corporate reputation, and it takes value of "1" if the company is appeared on the Fortune 500 list that year. LnRank measured as the natural logarithm of the Fortune 500 rank. I only examine companies appeared on the Fortune 500 list. Therefore, LnRank set to the missing variable if the company do not appear on the list in the year. In addition, a smaller LnRank indicates a higher corporate reputation, for example, a company ranked as number one in the year, which means this company is the most reputable company in the year. All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The t-statistics and z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

coefficients on Fortune500 are positive and significant at the 1% level in Columns (1) and (3). The results suggest that more reputable firms tend to disclose more strategic information to the public. In Columns (2) and (4), the coefficients on LnRank are negative and significant at the 5% level. The results also support the previous conclusion that corporate reputation positively affects the level of strategic information disclosure (a smaller LnRank indicates a higher corporate reputation).

5.4.4.3 The Effects of CEO Reputation (alternative proxies) on Strategic Information Disclosure

Jian and Lee (2011) define CEO reputation as the market's judgment of their ability. The CEO's reputational evaluation is multi-dimensional. In the previous tests of the current study, I consider CEO tenure as CEO reputation. However, CEO tenure only captures a limited aspect of CEO reputation. Therefore, I use the following two measures of CEO reputation in my robustness analysis: industry-adjusted firm performance during the CEO's tenure (Performance) and star CEOs selected by Institutional Investors (Star_CEO). Following Jian and Lee (2011), this study employs the one-year industry-adjusted firm performance, defined as the difference between the company's average monthly stock returns and its industry's (based on the two-digit SIC code) average monthly return over one year. Star CEOs (Star_CEO) are selected by Institutional Investor. Institutional Investor determines the best CEOs based on an assessment from approximately 1700 money managers, buy-side analysts, and sell-side researchers who voted for the best CEOs across 44 industries (Institutional Investor, 2020). Star_CEO is a dummy variable of CEO reputation, and it takes a value of "1" if the CEO appears on the Institutional Investor's Best CEOs list that year.

Table 5. 10 presents the results of the regression of strategic information disclosure (SID) on CEO reputation. Columns (1) and (2) report the results of OLS regressions. Columns (3) and (4) report the results of ordered probit regressions. The dependent

Table 5. 10 The effect of CEO reputation (alternative proxies) on strategic information disclosure

	(1)	(2)	(3)	(4)
Performance	–0.7815**		–0.5642**	
	(–2.44)		(–2.35)	
Star_CEO		0.0721		0.0630
		(1.13)		(1.30)
ROA	–0.1358	–0.1538	–0.2544	–0.2610
	(–0.19)	(–0.22)	(–0.47)	(–0.49)
Lev	–0.3554*	–0.3104	–0.2742*	–0.2393*
	(–1.79)	(–1.61)	(–1.87)	(–1.68)
Liquidity	–0.0758***	–0.0753***	–0.0641***	–0.0638***
	(–2.77)	(–2.78)	(–3.17)	(–3.17)
Analyst	0.0151***	0.0135***	0.0116***	0.0104***
	(3.02)	(2.70)	(3.08)	(2.76)
PE	–0.0006*	–0.0007**	–0.0005*	–0.0005*
	(–1.96)	(–2.02)	(–1.79)	(–1.85)
MTB	–0.0774**	–0.0825***	–0.0634***	–0.0678***
	(–2.56)	(–2.80)	(–2.77)	(–3.03)
E/S	–0.5137	–0.4634	–0.4343	–0.4091
	(–1.37)	(–1.26)	(–1.59)	(–1.53)
Fin Cons	0.2029***	0.1882***	0.1686***	0.1584***
	(3.08)	(2.91)	(3.40)	(3.25)
BoardSize	0.0644***	0.0594***	0.0445***	0.0414***
	(3.69)	(3.49)	(3.49)	(3.32)
Meetings	0.0081	0.0079	0.0080	0.0081
	(0.85)	(0.84)	(1.15)	(1.18)
MOWN	0.1519	0.1400	0.2065	0.2019
	(0.36)	(0.34)	(0.65)	(0.65)
BLOCK	–0.3890	–0.2657	–0.3131	–0.2157
	(–1.42)	(–1.00)	(–1.54)	(–1.09)
HHI	–0.1910	0.2421	0.0223	0.3334
	(–0.16)	(0.22)	(0.02)	(0.41)
Constant	3.3192***	3.1602***		
	(6.93)	(7.27)		
cut1			–1.4716***	–1.3540***
			(–4.17)	(–4.11)
cut2			–1.2559***	–1.1380***
			(–3.56)	(–3.46)
cut3			–0.7646**	–0.6519**
			(–2.18)	(–1.99)
cut4			–0.0037	0.1184
			(–0.01)	(0.36)
cut5			0.8619**	0.9882***
			(2.46)	(3.01)
cut6			1.6737***	1.7999***
			(4.76)	(5.47)
cut7			2.7111***	2.8349***
			(7.64)	(8.48)
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Observations	2752	2858	2752	2858
Adj. R-sq	0.158	0.152		
Pseudo R-sq			0.056	0.054

Note: Table 5.10 reports the results from regressing strategic information disclosure on CEO reputation (alternative proxies) and control variables. The dependent variable is SID (strategic information disclosure). Models (1) and (2) report the results of OLS regressions. Models (3) and (4) report the results of ordered probit regressions. Performance is one-year industry-adjusted firm performance measured by the difference between the company's average monthly stock returns and its industry's (based on the two-digit SIC code) average monthly return over one year. Star_CEO is a dummy variable of CEO reputation, and it takes value of "1" if the CEO is appeared on Institutional Investor's Best CEOs list that year. All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The t-statistics and z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

variable is strategic information disclosure (SID). In Columns (1) and (3), the coefficients of Performance are negative and statistically significant at the 5% level. The results support my previous conclusion that reputable CEOs tend to disclose less strategic information. However, Columns (2) and (4) show that Star_CEO is insignificantly correlated with SID.

5.4.4.4 The Joint Effect of Corporate Reputation and CEO Reputation on Strategic Information Disclosure (additional controls)

In this section, I further test whether my main finding (the joint effect of corporate reputation and CEO reputation on strategic information disclosure) is sensitive to the inclusion of additional controls. First, following Agapova and Volkov (2019), this study employs Beta to proxy the systematic risk of the company, because companies with more systematic risk have a higher cost of equity. Thakor's (2015) suggests that the cost of equity is higher for companies without disclosure than companies with disclosure, therefor companies will provide more information when they anticipate raising capital. Second, empirical evidence shows that board independence is an important factor that affects companies' strategic information disclosure activities. Studies find that a firms with more independent boards tend to increase the level of disclosure (Chau and Gray, 2010; Lim et al., 2007). Hassan and Lahyani (2019) find that independent non-executive directors tend to provide less strategic information disclosure when firms face negative media tone. To mitigate the concern that omitted variables may drive my results, I control for the impact of board independence (Independence) on strategic information disclosure. Third, this study includes R&D intensity in the models. According to Jansen (2010), in some industries, companies choose to disclose information about their upcoming innovations. However, in other industries, companies choose to keep silent until the innovation is launched. The potential reason is that companies have less incentive to disclose strategic information when proprietary disclosure costs are high (Jones, 2007; Lu and Tucker, 2012). Fourth, this study takes executive's compensation (Compensation) into account. Prior studies document that compensation is an important factor that influences managerial decisions (e.g., Demerjian et al., 2012; De Franco et al., 2017; Wang et al., 2017). Finally, this study includes executive age (Executive age) as an additional control variable. Bochkay

et al. (2019) indicate that young CEOs are associated with increased corporate forward-looking disclosure. They argue that young managers have incentives to provide more information to reduce investors' uncertainty about firms' future performance, and thus reduce their managerial career concerns.

In Table 5.11, Columns (1) and (2) report the results of OLS regressions; Columns (3) and (4) report the results of ordered probit regressions. The dependent variable is strategic information disclosure (SID). AMA_Score*CEO_Tenure and AMA_Tenure*CEO_Tenure are interaction terms. The results show that the coefficients on Beta are insignificant; firms with more independent board disclose more strategic information to reduce information asymmetry; R&D intensity is insignificantly related to strategic information disclosure; executive compensation is significantly and positively associated with strategic information disclosure; executive age significantly and negatively affect strategic information disclosure. Note that the trend of the coefficients on interaction terms between corporate reputation and CEO reputation (AMA_Score*CEO_Tenure and AMA_Tenure*CEO_Tenure) remain the same as my previous findings, implying that my main results is not affected by the inclusion of the additional control variables.

In sum, my results are robust and insensitive to the inclusion of additional controls, further confirming that CEO reputation moderates the positive impact of corporate reputation on the level of strategic information disclosure.

5.5 Summary

Strategic planning participated in the company's daily operations. In addition to guiding the development of the company to reach the established goals, it also plays an important role in communication (Baginski et al., 2017). Companies communicate strategic information to public in order to receive the expected reaction from the market. Besides, studies suggest that players' reputation concerns influence their own behaviour, such as voluntary disclosure (Beyer and Dye, 2012; Bochkay et al., 2019; Cao et al., 2012; Francis et al., 2008). Therefore, this study examines the relationship between the

Table 5. 11 The joint effect of corporate and CEO reputation on strategic information disclosure (additional controls)

	(1)	(2)	(3)	(4)
AMA_Score	0.0343**		0.0260**	
	(2.44)		(2.43)	
AMA_Score*CEO_Tenure	–0.0030**		–0.0021**	
	(–2.19)		(–2.07)	
AMA_Tenure		0.0533***		0.0382***
		(3.11)		(2.88)
AMA_Tenure*CEO_Tenure		–0.0050***		–0.0034***
		(–2.96)		(–2.76)
Tenure	–0.0089	–0.0077	–0.0066	–0.0058
	(–1.46)	(–1.35)	(–1.44)	(–1.36)
ROA	–0.1280	–0.1368	–0.2487	–0.2544
	(–0.18)	(–0.19)	(–0.45)	(–0.46)
Lev	–0.4578**	–0.4770**	–0.3529**	–0.3678**
	(–2.33)	(–2.45)	(–2.39)	(–2.51)
Liquidity	–0.0510*	–0.0539*	–0.0470**	–0.0491**
	(–1.77)	(–1.88)	(–2.18)	(–2.28)
Analyst	0.0108**	0.0104**	0.0084**	0.0082**
	(2.07)	(2.02)	(2.08)	(2.06)
PE	–0.0005	–0.0005	–0.0004	–0.0004
	(–1.53)	(–1.54)	(–1.38)	(–1.39)
MTB	–0.0822***	–0.0815***	–0.0702***	–0.0696***
	(–2.60)	(–2.58)	(–2.89)	(–2.87)
E/S	–0.2231	–0.2298	–0.2233	–0.2285
	(–0.59)	(–0.61)	(–0.80)	(–0.82)
Fin Cons	0.1977***	0.1903***	0.1679***	0.1629***
	(2.97)	(2.81)	(3.30)	(3.15)
BoardSize	0.0455**	0.0444**	0.0305**	0.0301**
	(2.57)	(2.54)	(2.31)	(2.30)
Meetings	0.0029	0.0025	0.0040	0.0037
	(0.30)	(0.26)	(0.56)	(0.52)
MOWN	0.6341	0.5920	0.5524*	0.5212
	(1.49)	(1.39)	(1.69)	(1.58)
BLOCK	–0.3567	–0.3816	–0.2702	–0.2935
	(–1.28)	(–1.37)	(–1.28)	(–1.39)
HHI	0.6287	0.6953	0.5868	0.6264
	(0.58)	(0.64)	(0.71)	(0.76)
Beta	–0.0364	–0.0329	–0.0455	–0.0439
	(–0.47)	(–0.43)	(–0.77)	(–0.75)
Independence	0.0104***	0.0103***	0.0077***	0.0076***
	(2.94)	(2.92)	(2.88)	(2.87)
R&D intensity	0.3290	0.3579	0.2829	0.2984
	(0.36)	(0.39)	(0.40)	(0.43)
Compensation	0.0002**	0.0002**	0.0002**	0.0002**
	(2.22)	(2.26)	(2.33)	(2.38)
Executive age	–0.0215**	–0.0221**	–0.0168**	–0.0172**
	(–2.28)	(–2.34)	(–2.39)	(–2.45)
Constant	3.4440***	3.5465***		
	(4.44)	(4.54)		
cut1			–1.6665***	–1.7386***
			(–2.87)	(–2.97)
cut2			–1.4535**	–1.5252***
			(–2.50)	(–2.61)
cut3			–0.9577*	–1.0283*
			(–1.65)	(–1.76)
cut4			–0.1665	–0.2361
			(–0.29)	(–0.41)
cut5			0.7038	0.6345
			(1.21)	(1.09)
cut6			1.5360***	1.4661**
			(2.65)	(2.51)
cut7			2.6260***	2.5564***
			(4.50)	(4.36)
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Observations	2644	2644	2644	2644
Adj. R-sq	0.172	0.174		
Pseudo R-sq			0.062	0.062

Note: This table presents the results of the joint effect of corporate reputation and CEO reputation on strategic information disclosure. There are five additional control variables in the models, including Beta, board independence (Independence), R&D intensity, Compensation, and Executive age. AMA_Score*CEO_Tenure and AMA_Tenure*CEO_Tenure are interaction terms. The dependent variable is SID (strategic information disclosure). Models (1) and (2) report the results of OLS regressions. Models (3) and (4) report the results of ordered probit regressions. All regressions include year and industry fixed effects. All industries are based on 2-digit SIC codes. All variables are defined in the Appendix 3. The t-statistics and z-statistics are shown in parentheses are based on heteroscedasticity-robust standard errors. *, **, and *** denote significance at the 10%, 5%, 1% respectively.

reputation effects and corporate strategic information disclosure decisions. Based on a sample of US non-financial firms included in the S&P 500 index during the period from 2009 to 2018, this study finds that companies with higher reputation tend to provide more strategic information to the public. In addition, companies with long-term reputation (those with longer tenure on the "America's Most Admired Companies" list) have incentives to provide more strategic information disclosure. However, unlike the impacts of corporate reputation, reputable CEOs are less likely to disclose additional strategic information. This study also finds that the effect of CEO reputation on firms' disclosure decisions making is stronger than the impact of corporate reputation; high CEO reputation moderates the positive impact of corporate reputation on the level of strategic information disclosure.

In sum, this studies provides empirical evidence of the relationship between reputation effects and strategic information disclosure. The main results are robust across a series of checks. This study makes a number of contributions to the existing literature. Firstly, it adds to the literature that examines factors associated with corporate strategic information disclosure. A large number of studies suggest that corporate reputation and CEO reputation significantly influence firms' decisions making and outcomes, such as debt financing activities, capital investment, and financial reporting (Boivie et al., 2016; Cao et al., 2012, 2015; Jian and Lee, 2011). However, there is little research addressing the effect of corporate/CEO reputation on voluntary disclosure, let along the strategic information disclosure. Therefore, this study fills this research gap by exploring the impact of corporate/CEO reputation on strategic information disclosure. This study shows that corporate reputation and CEO reputation have significant impacts on corporate decisions making on strategic information disclosure. Corporate reputation positively associated with the level of corporate strategic information disclosure. However, CEO reputation negatively related to the quantity of corporate strategic information disclosure. Secondly, this study contributes to the literature by providing new evidence of the interaction effect between corporate reputation and CEO reputation

based on strategic information disclosure. My result shows that CEO reputation effect on firms' decisions making is stronger than corporate reputation effect; CEO reputation weakens the effect of corporate reputation on corporate strategic information disclosure behaviour. There is little research examining the joint effect between corporate reputation and CEO reputation. Therefore, this study significantly contributes to the empirical studies on corporate/CEO reputation. This study has practical implications for corporate management. For companies, earning a good corporate reputation and hiring a reputable CEO is important, because reputation concerns significantly affect corporate decisions and outcomes. By comparing corporate reputation and CEO reputation, this study suggests that corporate reputation is not necessarily relevant and influential to the firm's decisions making when the firm is led by a reputable CEO. Furthermore, reputable CEOs tend to adopt a conservative approach, providing less strategic information; on the contrary, CEOs with poor reputation are more likely to take risks and release more strategic information. Accordingly, it is important for companies to consider CEO reputation when they hiring a CEO. Besides, analyst and investors need to consider corporate/CEO reputation when they assessing and estimating companies' future performance.

CHAPTER 6 CONCLUSIONS

6.1 Introduction

This chapter summarises this thesis and provides suggestions for future academic research. Communication of corporate strategies seems to be increasingly common for large global companies (Whittington and Yakis-Douglas, 2012). Strategic information disclosure can to some degree alleviate information asymmetry and a firm's cost of capital (Cotter et al., 2011; Healy and Palepu, 2001; Lu and Tucker, 2012; Thakor, 2015). Besides, companies with strong confidence and ambition are encouraged to provide strategy-related information to gain the support of shareholders and analysts. Research also suggests that strategic information disclosure may enhance corporate reputation (Whittington and Yakis-Douglas, 2012). However, providing additional strategic information has potential proprietary costs due to the existence of competitors, thus harming companies' competitive advantages (Cotter et al., 2011). Furthermore, strategic information disclosure may cause disagreements between investors and managers, increasing the probability of funding denial (Agapova and Volkov, 2019; Thakor, 2015). Accordingly, companies have both incentives and disincentives to provide strategic information to the public. They need to consider the trade-off between the costs and benefits of disclosure, and make different strategic information disclosure decisions for different audiences. Given the importance of strategic information disclosure and the limited amount of research in this area, this thesis aims to analyse the factors that influence corporate strategic information disclosure decisions.

The thesis attempts to achieve five main objectives. The first objective is to conduct a comprehensive literature review on strategic information disclosure. I aim to deeply summarise the definitions, criteria, measurements, factors, and economic consequences of strategic information disclosure. The second objective is to empirically investigate the influences of ownership structure and product market competition on corporate strategic information disclosure decisions. Within the implementation of this objective,

the interaction effect between ownership structure and product market competition on strategic information disclosure is also examined. The third objective focuses on the association between managerial ability and strategic information disclosure. The fourth objective is to analyse how corporate reputation and CEO reputation affect strategic information disclosure. Within the implementation of this objective, the joint effect between corporate reputation and CEO reputation on strategic information disclosure is also examined. The last objective attempts to explore the disclosure tone change of strategic information. To gain a better understanding of the main findings of this thesis, the following subsections provide more information regarding the empirical studies.

6.2 Main Findings

6.2.1 Empirical Study 1 (Chapter 3). *Ownership Structure, Product Market Competition, and Strategic Information Disclosure*

In the first empirical study, based on a sample of US non-financial companies included in the S&P 500 index during the period from 2009 to 2018, I first investigate the impacts of ownership structure and product market competition on strategic information disclosure. I find a significant negative association between strategic information disclosure and blockholder ownership. My results suggest that companies with higher levels of blockholder ownership have lower levels of information asymmetry, and thus have less incentive to provide strategic information. However, my results indicate that the negative association between managerial ownership and strategic information disclosure is sensitive to different models. In addition, I find that product market competition negatively and significantly affects the level of strategic information disclosure, implying that firms tend to provide less strategic information when they face higher competition. This result provides empirical evidence to support the proprietary cost theory.

Next, I examine the interaction effect between ownership structure and product market competition on strategic information disclosure. The results vary with different types of ownership. Specifically, I find that managerial ownership negatively and

significantly affects strategic information disclosure in non-competitive industries only. Therefore, product market competition can be viewed as a substitute for managerial ownership to influence managers' disclosure decisions. However, the results for the interaction effect between blockholder ownership and competition on strategic information disclosure show a mixed relationship. This implies that the interaction between blockholder ownership and product market competition combines both substitutionary and complementary effects on managers' strategic information disclosure decisions. The impact of blockholder ownership on strategic information disclosure decreases as product market competition increases; however, when competition reaches a certain level, the influence of blockholder ownership on strategic information disclosure becomes significant again. This finding is consistent with Schmidt's (1997) theoretical model that the impact of product market competition on management's monetary incentives is both substitutionary and complementary. The above findings are robust across a series of checks, including inclusion of additional controls, alternative measures of product market competition, sub-sample analysis, and endogeneity between competition and strategic information disclosure.

In additional analyses on strategic information disclosure. First, I explore the association between product market competition and the tone changes of strategic information disclosure. My findings suggest that there is a decrease in the positive tone of strategic information disclosure when firms face fierce competition in the market. The results imply that companies' attempt to prevent competitors from entering the market through the negative change in disclosure tone. In addition, I test the interaction between ownership control and product market competition on strategic information disclosure tone. My results show that managers owning more shares are associated with a reduction in positive disclosure tone when companies face fierce product market competition; however, companies with a higher level of managerial ownership tend to disclose strategic information in a relatively positive tone when product market competition is at a lower level, thereby benefitting from capital market. However, the interaction between blockholder control and product market competition has no significant effect on strategic information disclosure tone. Second, I analyse the impacts of ownership and product market competition on various categories of strategic information disclosure. I find that ownership structure and product market competition

both have negative impacts on various categories of strategic information. These results remain consistent with my previous analysis. Specifically, blockholder ownership has a greater impact on corporate strategic information disclosure decisions than managerial ownership; companies with more blockholders tend to release less strategic information to the public; and companies are discouraged to provide additional strategic information disclosure when they face higher product market competition. Finally, I extend the study to investigate the interaction between strategic information disclosure and product market competition on firms' access to finance, profitability, and firm value. I also test the interaction between strategic information disclosure and ownership control on firms' access to finance, profitability, and firm value. My results show that compared with firms with strategic information disclosure in competitive industries, corporate strategic information disclosure leads to relatively easier access to finance, greater firm performance and higher firm value when companies operate in non-competitive industries. I also find that increase in strategic information disclosure leads to harder access to finance when blockholder control is greater in the company. The underlying reason may be investor-management disagreement. In addition, blockholder ownership and strategic information disclosure interact with each other to negatively affect firms' profitability.

6.2.2 Empirical Study 2 (Chapter 4). *Managerial ability and Strategic Information Disclosure*

In the second empirical chapter, based on a sample of US non-financial companies included in the S&P 500 index during the period from 2009 to 2018, I analyse the impacts of managerial ability on strategic information disclosure. My results show that companies with high-ability managers provide less strategic information disclosure. The potential economic interpretation of the negative relationship is that reduction of stakeholders' uncertainty regarding managerial ability, firms' performance, and future prospects, decrease the demand for additional information and managerial career concerns and therefore, resulting in decreased information disclosure (Bochkay et al., 2019). Moreover, given the existence of the proprietary costs, high-ability managers may have less incentive to disclose strategic information (Bhojraj et al., 2004; Lu and Tucker, 2012). To verify my main findings, I conduct a series of robustness analyses, including the Granger causality test, alternative proxies for managerial ability

(Historical ROA), and additional controls (Firm age, Executive age, and Compensation). The results of all robustness analyses support my previous conclusion.

In order to complement the main analysis in this study and deeply investigate how managerial ability heterogeneity affects companies' strategic information disclosure behaviour, I conduct several additional analyses on strategic information disclosure. First, I investigate the disclsoure tone of strategic information. I apply Loughran and McDonald (2011) s' dictionary of negative and positive words to evaluate strategic information extracted from all transcripts of my sample firms. Specifically, I examine the association between managerial ability and the tone changes of strategic information disclosure. My findings suggest that there is an increase in the positive tone of strategic information disclosure when companies led by high-ability managers. Second, I investigate the effects of managerial ability on various categories of strategic information disclosure. I find that companies with high-ability managers are more likely to reduce the level of all categories of strategic information except for moving-related strategic information. The results support my main finding that more able managers have less incentive to disclose strategic information.

6.2.3 Empirical Study 3 (Chapter 5). *Corporate Reputation, CEO Reputation, and Strategic Information Disclosure*

In the third empirical chapter, based on a sample of US non-financial companies included in the S&P 500 index during the period from 2009 to 2018, I firstly exam the impacts of corporate reputation on strategic information disclosure. I find a significant and positive association between corporate reputation and strategic information disclosure. Corporate strategic activities are associated with their competitive advantages (Grant, 2003; Porter, 1996) and value creation (Eberhart et al., 2004; Hellmann and Puri, 2000; Lee et al., 2000; Liao and Lin, 2017; Moran and Ghoshal, 1999). Therefore, reputable companies tend to protect their reputation by providing additional strategies-related information to outsiders, because participating in strategic activities allows them to signal their efforts and ability and influence how outsiders evaluate the companies. Next, I examine how CEO reputation influence strategic

information disclosure. The results show a significant and negative association between CEO reputation and strategic information disclosure. Unlike the impacts of corporate reputation, reputable CEO tend to reduce the level of strategic information disclosure. The potential reason may be due to the negative effects of strategic information disclosure, for example, the investor-management disagreement (Agapova and Volkov, 2019; Thakor, 2015) and the bad stock market reaction after the strategic information announcement by the company's CEO, and thus influence the CEO reputation (Whittington and Yakis-Douglas, 2012). Besides, short-tenured managers with strong career or reputation concerns because the outsiders know little about their ability, thus, managers with long tenure have less incentive to disclose additional information (Bochkay et al., 2019; Gibbons and Murphy,1992; Park and Yoo, 2016). Based on these reasons, reputable CEOs may have strong incentives to protect their own reputation by discouraging additional strategic information disclosure, since the costs of strategic information disclosure (bad impacts on CEO's reputation) may outweigh the benefits of disclosure (reducing information asymmetry) for reputable CEOs. Finally, I examine the joint effect of corporate reputation and CEO reputation on strategic information discourse. The results suggest that the effect of CEO reputation on firms' disclosure decisions making is stronger than the impact of corporate reputation; CEO reputation moderates the positive impact of corporate reputation on strategic information disclosure.

To verify my main findings, I conduct a series of robustness analyses, including the Heckman two-stage analysis, alternative proxies for corporate reputation, alternative proxies for CEO reputation, and additional controls. The results of all robustness analyses are support my previous conclusions.

6.3 Implications, Limitations and Further Research

The findings of this thesis are valid and make a significant contribution to the existing accounting and finance literature. To the researcher's knowledge, this thesis provides new evidence to the disclosure literature on the role of ownership structure (managerial and blockholder ownership), product market competition, managerial ability, CEO reputation, and corporate reputation. Empirical evidence relating to strategic information disclosure is limited. This study enriches the literature on the determinants of strategic information disclosure by using a new measurement of strategic information disclosure. This study employs the strategic word list of Agapova and Volkov (2019) but a new coding scheme to assign strategic information disclosure scores to each company. This new coding scheme allows us to more comprehensively investigate the level and diversity of strategic information disclosed by a company based on yearly data. Second, this thesis contributes to literature by providing new evidence of the interaction effect between ownership structure and product market competition on strategic information disclosure. There is prior research investigating the interaction effect between corporate governance and product market competition on various aspects such as stock prices, firm performance, and the profitability of corporate R&D investment (e.g., Giroud and Mueller, 2011; Liao and Lin, 2017). However, there is no study examining such interaction effects on strategic information disclosure. This study provides empirical evidence on the interaction effect between ownership structure and product market competition on strategic information disclosure. Third, this thesis contributes to literature by providing the new evidence of the joint effect between corporate reputation and CEO reputation on strategic information disclosure. My result shows that CEO reputation effect on firms' decisions making is stronger than corporate reputation effect; CEO reputation weakens the effect of corporate reputation on corporate strategic information disclosure behaviour. Prior studies mainly focus on examining corporate reputation and CEO reputation respectively, however, there is little research examining the joint effect between corporate reputation and CEO reputation. Therefore, this study fills this research gap and may serve a reference for corporate

operations and market investors. Furthermore, this thesis sheds light on the disclosure tone changes of strategic information under different conditions (product market competition, ownership control, and managerial ability). Previous studies pay little attention to the disclosure tone of strategic information. Finally, this study contributes to the literature by investigating how strategic information disclosure influences firm profitability, firm value, and access to finance. It adds insights to the disclosure literature on the economic consequences of strategic information disclosure.

Concerned with practical implications, this study provides valuable suggestions for companies. First, companies should adjust their corporate governance structure based on different levels of product market competition, and thus reduce the cost of internal monitoring. The underlying reason is that, competitive pressure imposes discipline on managers to reduce agency problems, thus ensuring that managers are obliged to make optimal decisions and maximize profits. Second, companies should consider a trade-off between the benefits and costs of releasing strategic information and make appropriate decisions about efficient disclosure activities for ensuring the effective operation of companies, based on the different levels of product market competition and ownership control. Specifically, companies should encourage less strategic information disclosure when they face fierce product market competition, as such disclosure leads to harder access to finance, poor firm performance, and lower firm value when companies operate in competitive industries. Besides, companies should reduce the level of strategic information disclosure when blockholder control is greater in the company, as such disclosure may result in investor-management disagreement, and thus lead to bad outcomes. Third, for companies, earning a good corporate reputation and hiring a reputable CEO is important, because reputation concerns significantly affect corporate decisions and outcomes. By comparing corporate reputation and CEO reputation, this study suggests that corporate reputation is not necessarily relevant and influential to the firm's decisions making when the firm is led by a reputable CEO. Furthermore, reputable CEOs tend to adopt a conservative approach, providing less strategic

information; on the contrary, CEOs with poor reputation are more likely to take risks and release more strategic information. Accordingly, it is important for companies to consider CEO reputation when they hiring a CEO. Besides, analyst and investors need to consider corporate/CEO reputation when they assessing and estimating companies' future performance.

There are some research limitations within this thesis, and thus, there are several ways to extend it. First, this research limited its sample to US non-financial companies included in the S&P 500 index during the period from 2009 to 2018. This thesis only examines disclosure data for ten years due to the difficulty to obtain disclosure transcripts (manually collect), therefore, future research may extend the sample period to investigate strategic information disclosure. Second, the empirical research in this thesis has focused on the role of ownership structure, product market competition, managerial ability, CEO reputation, and corporate reputation, thus, future research may consider a wider role of internal governance mechanisms and external factors in strategic information disclosure. Third, the empirical research in this thesis has focused on the quantity of strategic information disclosure, thus, future research may investigate the strategic information disclosure quality. Fourth, the empirical research in this thesis only preliminarily examine the economic consequences of strategic information disclosure (access to finance, profitability, and firm value), and therefore, future research may analyse the economic consequences of strategic information disclosure, such as stock market reactions and the accuracy of analysts' forecasts. Finally, the final sample of this thesis considers only the US market, thus, future research may extend the examination to other markets, such as UK, Asia, and continental Europe.

REFERENCES

Aboody, D., Kasznik, R., 2000. CEO stock options awards and the timing of corporate voluntary disclosures. *Journal of Accounting and Economics*, 29, 73–100.

Agapova, A., Volkov, N., 2019. Guidance on strategic information: Investor-management disagreement and firm intrinsic value. *Journal of Banking and Finance*, 108, 105632.

Aghion, P., Dewatripont, M., Rey, P., 1999. Competition, financial discipline and growth. *Review of Economic Studies*, 66, 825–852.

Akerlof, G., 1970. The Market for "Lemons": Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84, 488–500.

Allen, F., Gale, D., 1999. Diversity of opinion and financing of new technologies. *Journal of financial intermediation*, 8, 68–89.

Andreou, P.C, Ehrlich, D., Louca, C., 2013. Managerial ability and firm performance: Evidence from the global financial crisis. *European Financial Management Association*, Annual Conference: Citeseer.

Andreou, P.C., Karasamani, I., Louca, C., Ehrlich, D., 2017. The impact of managerial ability on crisis-period corporate investment. *Journal of Business Research*, 79, 107–122.

Andreou, P.C., Philip, D., Robejsek, P., 2016. Bank liquidity creation and risk-taking: Does managerial ability matter? *Journal of Business Finance and Accounting*, 43, 226–259.

Armitage, S., Marston, C., 2008. Corporate disclosure, cost of capital and reputation: Evidence from finance directors. *British Accounting Review*, 40, 314–336.

Athanasakou, V., Eugster, F., Schleicher, T., Walker, M., 2020. Annual report narratives and the cost of equity capital: UK evidence of a U-shaped relation. *European Accounting Review*, 29, 27-54.

Athanasakou, V.E., El-Haj, M., Rayson, P., Walker, M., Young, S., 2019. Annual report commentary on the value creation process. *Available at SSRN 3212854*.

Azaria, A., Rabinovich, Z., Goldman, C.V., Kraus, S., 2014. Strategic information disclosure to people with multiple alternatives. *ACM Transactions on Intelligent Systems Technology*, 5, 1–21.

Baginski, S.P., Bozzolan, S., Marra, A., Mazzola, P., 2017. Strategy, valuation, and forecast accuracy: Evidence from Italian strategic plan disclosures. *European*

Accounting Review, 26, 341–378.

Bagnoli, M., Levine, S., Watts, S.G., 2005a. Analyst estimation revision clusters and corporate events, Part I. *Annals of Finance*, 1, 245–265.

Bagnoli, M., Levine, S., Watts, S.G., 2005b. Analyst estimation revision clusters and corporate events, Part II. *Annals of Finance*, 1, 379–393.

Baik, B., Brockman, P.A., Farber, D.B., Lee, S., 2018. Managerial ability and the quality of firms' information environment. *Journal of Accounting, Auditing and Finance*, 33, 506–527.

Baik, B., Farber, D.B., Lee, S., 2011. CEO ability and management earnings forecasts. *Contemporary Accounting Research*, 28, 1645–1668.

Baker, M., Stein, J. C., Wurgler, J., 2003. When does the market matter? Stock prices and the investment of equity-dependent firms. *Quarterly Journal of Economics*, 118, 969–1005.

Bamber, L.S., Jiang, J., Wang, I.Y., 2010. What's my style? The influence of top managers on voluntary corporate financial disclosure. *Accounting review*, 85, 1131–1162.

Baños-Caballero, S., García-Teruel, P.J., Martínez-Solano, P., 2014. Working capital management, corporate performance, and financial constraints. *Journal of Business Research*, 67, 332–338.

Barako, D.G., Hancock, P., Izan, H., 2006. Factors influencing voluntary corporate disclosure by Kenyan companies. *Corporate Governance: an international review*, 14, 107–125.

Barth, M.E., Cahan, S.F., Chen, L., Venter, E.R., 2017. The economic consequences associated with integrated report quality: Capital market and real effects. *Accounting, Organizations and Society*, 62, 43–64.

Bartkus, B., Glassman, M., McAfee, B., 2002. Do large European, US and Japanese firms use their web sites to communicate their mission? *European Management Journal*, 20, 423–429.

Belkaoui, A., Karpik, P.G., 1989. Determinants of the corporate decision to disclose social information. *Accounting, Auditing and Accountability Journal*, 2, 36–51.

Beyer, A., Dye, R.A., 2012. Reputation management and the disclosure of earnings forecasts. *Review of Accounting Studies*, 17, 877–912.

Bhojraj, S., Blacconiere, W.G., D'Souza, J.D., 2004. Voluntary disclosure in a multi-

audience setting: An empirical investigation. *Accounting Review* ,79, 921–947.

Birt, J.L., Bilson, C.M., Smith, T., Whaley, R.E., 2006. Ownership, competition, and financial disclosure. *Australian Journal of Management*, 31, 235–263.

Bochkay, K., Chychyla, R., Nanda, D., 2019. Dynamics of CEO disclosure style. *Accounting Review*, 94, 103–140.

Boholm, A., 1998. Comparative studies of risk perception: A review of twenty years of research. *Journal of Risk Research*, 1, 135–163.

Boivie, S., Graffin, S.D., Gentry, R.J., 2016. Understanding the direction, magnitude, and joint effects of reputation when multiple actors' reputations collide. *Academy of Management Journal*, 59, 188–206.

Bonsall IV, S.B., Holzman, E.R., Miller, B.P., 2017. Managerial ability and credit risk assessment. *Management Science*, 63, 1425–1449.

Botosan, A., 1997. Disclosure level and the cost of equity capital. *Accounting Review*, 72, 323–349.

Bowman, E.H., Helfat, C.E., 2001. Does corporate strategy matter? *Strategic Management Journal*, 22, 1–23.

Bozanic, Z., Roulstone, D.T., Van Buskirk, A., 2018. Management earnings forecasts and other forward-looking statements. *Journal of Accounting Economics*, 65, 1–20.

Brennan, N., 1999. Voluntary disclosure of profit forecasts by target companies in takeover bids. *Journal of Business Finance and Accounting*, 26, 883–918.

Brown, S., Hillegeist, S.A., 2007. How disclosure quality affects the level of information asymmetry. *Review of Accounting Studies*, 12, 443–477.

Bui, D.G., Chen, Y.S., Hasan, I., Lin, C.Y., 2018. Can lenders discern managerial ability from luck? Evidence from bank loan contracts. *Journal of Banking and Finance*, 87, 187–201.

Burks, J.J., Cuny, C., Gerakos, J., Granja, J., 2018. Competition and voluntary disclosure: Evidence from deregulation in the banking industry. *Review of Accounting Studies*, 23, 1471–1511.

Camodeca, R., Almici, A., Sagliaschi, U., 2019. Strategic information disclosure, integrated reporting and the role of intellectual capital. *Journal of Intellectual Capital*, 20, 125–143.

Campbell, D., Shrives, P., Bohmbach-Saager, H., 2001. Voluntary disclosure of mission

statements in corporate annual reports: Signaling what and to whom? *Business Society Review*, 106, 65–87.

Cao, J., Cheng, Y., Golden, J., Zhang, J.H., 2019. Managerial ability, forecasting quality, and open-market repurchase program completion. *Review of Quantitative Finance and Accounting*, 53, 871–894.

Cao, Y., Myers, J.N., Myers, L.A., Omer, T.C., 2015. Company reputation and the cost of equity capital. *Review of Accounting Studies*, 20, 42–81.

Cao, Y., Myers, L.A., Omer, T.C., 2012. Does company reputation matter for financial reporting quality? Evidence from restatements. *Contemporary Accounting Research*, 29, 956–990.

Chahine, S., Filatotchev, I., 2008. The effects of information disclosure and board independence on IPO discount. *Journal of Small Business Management*, 46, 219–241.

Chang, Y.Y., Dasgupta, S., Hilary, G., 2010. CEO ability, pay, and firm performance. *Management Science*, 56, 1633–1652.

Chau, G., Gray, S., 2002. Ownership structure and corporate voluntary disclosure in Hong Kong and Singapore. *International Journal of Accounting*, 37, 247–265.

Chau, G., Gray, S., 2010. Family ownership, board independence and voluntary disclosure: Evidence from Hong Kong. *Journal of International Accounting, Auditing and Taxation*, 19, 93–109.

Chen, J.J., Cheng, X., Gong, S.X., Tan, Y., 2014. Do higher value firms voluntarily disclose more information? Evidence from China. *British Accounting Review*, 46, 18–32.

Chen, T.K., Liao, H.H., Chen, W.H., 2017. CEO ability heterogeneity, board's recruiting ability and credit risk. *Review of Quantitative Finance and Accounting*, 49, 1005–1039.

Chen, Y., Podolski, E.J., Veeraraghavan, M., 2015. Does managerial ability facilitate corporate innovative success? *Journal of Empirical Finance*, 34, 313–326.

Cheng, B., Ioannou, I., Serafeim, G., 2014. Corporate social responsibility and access to finance. *Strategic Management Journal*, 35, 1–23.

Cornaggia, K.J., Krishnan, G.V., Wang, C., 2017. Managerial ability and credit ratings. *Contemporary Accounting Research*, 34, 2094–2122.

Cotter, J., Lokman, N., Najah, M.M., 2011. Voluntary disclosure research: Which

theory is relevant. *Journal of Theoretical Accounting Research*, 6, 77–95.

Cowen, A., Groysberg, B., Healy P.M., 2003. Which Types of Analyst Firms Make More Optimistic Forecasts? *Working Paper*, Harvard University.

Craswell, A.T., Taylor, S.L., 1992. Discretionary disclosure of reserves by oil and gas companies: An economic analysis. *Journal of Business Finance and Accounting*, 19, 295–308.

Cremers, K. M., Nair, V. B., Peyer, U., 2008. Takeover defenses and competition: the role of stakeholders. *Journal of Empirical Legal Studies*, 5, 791–818.

Culver, J., Burke, W., Yasui, Y., Durfy, S., Press, N., 2001. Participation in breast cancer genetic counseling: the influence of educational level, ethnic background, and risk perception. *Journal of Genetic Counseling*, 10, 215–231.

Curi, C., Lozano-Vivas, A., 2020. Managerial ability as a tool for prudential regulation. *Journal of Economic Behavior and Organization*, 174, 87–107.

Custódio, C., Ferreira, M.A., Matos, P., 2013. Generalists versus specialists: Lifetime work experience and chief executive officer pay. *Journal of Financial Economics*, 108, 471–492.

Custódio, C., Ferreira, M.A., Matos, P., 2019. Do general managerial skills spur innovation? *Management Science*, 65, 459–476.

Daines, R., Jones, M.C., 2012. Truth or consequences: Mandatory disclosure and the impact of the 1934 Act. *Working Paper*, Stanford University, and Columbia University.

Darrough, M.N., Stoughton, N.M., 1990. Financial disclosure policy in an entry game. *Journal of Accounting and Economics*, 12, 219–243.

DeAngelo, L., 1988. Managerial competition, information costs, and corporate governance: The use of accounting performance measures in proxy contests. *Journal of Accounting and Economics*, 10, 3–37.

De Franco, G., Hope, O.K., Lu, H., 2017. Managerial ability and bank-loan pricing. *Journal of Business Finance and Accounting*, 44, 1315–1337.

Dittmar, A., Thakor, A., 2007. Why do firms issue equity? *Journal of Finance*, 62, 1–54.

Delis, M.D., Iosifidi, M., Kazakis, P., Ongena, S., Tsionas, M., 2020. Management as the sine qua non for M&A success. *Available at SSRN 3035192*.

Delis, M.D., Tsionas, M., 2017. Measuring Managerial Ability: Getting close to the

Holy Grail. *Available at SSRN 2913493*.

Demerjian, P., Lev, B., McVay, S., 2012. Quantifying managerial ability: A new measure and validity tests. *Management science*, 58, 1229–1248.

Demerjian, P., Lewis-Western, M., McVay, S., 2020. How does intentional earnings smoothing vary with managerial ability? *Journal of Accounting, Auditing and Finance*, 35, 406–437.

Demerjian, P.R., Lev, B., Lewis, M.F., McVay, S.E., 2013. Managerial ability and earnings quality. *Accounting Review*, 88, 463–498.

Depoers, F., 2000. A cost benefit study of voluntary disclosure: Some empirical evidence from French listed companies. *European Accounting Review*, 9, 245–263.

Depoers, F., Jeanjean, T., 2010. Determinants of quantitative information withholding in annual reports. *European Accounting Review*, 21, 115–151.

Diffenbach, J., Higgins, R.B., 1987. Strategic credibility can make a difference. *Business Horizons*, 30, 13–18.

Driouchi, T., Chen, M., Lyu, Z., Bennett, D.J., So, R.H., 2021. Ambiguity, managerial ability, and growth options. *British Journal of Management*, 0, 1–23.

Dye, R.A., 2001. An evaluation of "essays on disclosure" and the disclosure literature in accounting. *Journal of Accounting and Economics*, 32, 181–235.

Eberhart, A.C., Maxwell, W.F., Siddique, A.R., 2004. An examination of long-term abnormal stock returns and operating performance following R&D increases. *Journal of Finance*, 59, 623–650.

Einhorn, E., 2005. The nature of the interaction between mandatory and voluntary disclosures. *Journal of Accounting Research*, 43, 593–621.

Eng, L.L., Mak, Y.T., 2003. Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy*, 22, 325–345.

Epstein, M.J., 2011. Reputation building, website disclosure, and the case of intellectual capital. *Emerald Group Publishing*.

Equinox Management Consultants Ltd. (2001). Practices and patterns of informal investment: A report prepared for the Small Business Policy Branch. *Industry Canada*, Ottawa.

Erkens, D.H., Bonner, S.E., 2013. The role of firm status in appointments of accounting financial experts to audit committees. *Accounting Review*, 88, 107–136.

Fama, E.F., Jensen, M.C., 1983. Separation of ownership and control. *Journal of Law*

and Economics, 26, 301–325.

Fang, L., Yasuda, A., 2009. The effectiveness of reputation as a disciplinary mechanism in sell-side research. *Review of Financial Studies*, 22, 3735–3777.

Fang, L., Yasuda, A., 2014. Are stars' opinions worth more? The relation between analyst reputation and recommendation values. *Journal of Financial Services Research*, 46, 235–269.

Farrell, J., 1987. Cheap talk, coordination, and entry. *RAND Journal of Economics*, 18, 34–39.

Fee, C.E., Hadlock, C., 2003. Raids, rewards, and reputations in the market for managerial talent. *Review of Financial Studies*, 16, 1315–1357.

Feldman, R., Govindaraj, S., Livnat, J., Segal, B., 2010. Management's tone change, post earnings announcement drift and accruals. *Review of Accounting Studies*, 15, 915–953.

Ferguson, M.J., Lam, K.C., Lee, G.M., 2002. Voluntary disclosure by state-owned enterprises listed on the stock exchange of Hong Kong. *Journal of International Financial Management Accounting*, 13, 125–152.

Ferreira, D., Rezende, M., 2007. Corporate strategy and information disclosure. *RAND journal of economics*, 38, 164–184.

Fich, E. M., A. Shivdasani., 2007. Financial fraud, director reputation, and shareholder wealth. *Journal of Financial Economics* 86, 306–36.

Fortune, 2020a. Definitions and explanations. *https://fortune.com/franchise-list-page/fortune-500-methodology-2020*.

Fortune, 2020b. Methodology for World's Most Admired Companies. *https://fortune.com/franchise-list-page/worlds-most-admired-companies-2020-methodology/*.

Francis, B.B., Sun, X., Wu, Q., 2013. Managerial Ability and Tax Avoidance. *Rensselaer Polytechnic Institute*.

Francis, J., Huang, A.H., Rajgopal, S., Zang, A.Y., 2008. CEO reputation and earnings quality. *Contemporary Accounting Research*, 25, 109–147.

Gan, H., 2019. Does CEO managerial ability matter? Evidence from corporate investment efficiency. *Review of Quantitative Finance and Accounting*, 52, 1085–1118.

García-Meca, E., Sánchez-Ballesta, J.P., 2010. The association of board independence

and ownership concentration with voluntary disclosure: A meta-analysis. *European Accounting Review*, 19, 603–627.

Garmaise, M., 2001. Rational beliefs and security design. *Review of Financial Studies*, 14, 1183–1213.

Gao, H., Darroch, J., Mather, D., MacGregor, A., 2008. Signaling corporate strategy in IPO communication: A study of biotechnology IPOs on the NASDAQ. *Journal of Business Communication*, 45, 3–30.

Ghazali, M., 2008. Voluntary disclosure in Malaysian corporate annual reports: Views of stakeholders. *Social Responsibility Journal*, 4, 504–516.

Gibbons, R., Murphy, K.J., 1992. Optimal incentive contracts in the presence of career concerns: Theory and evidence. *Journal of Political Economy*, 100, 468–505.

Gietzmann, M., Ireland, J., 2005. Cost of capital, strategic disclosures and accounting choice. *Journal of Business Finance and Accounting*, 32, 599-634.

Giroud, X., Mueller, H.M., 2011. Corporate governance, product market competition, and equity prices. *Journal of Finance*, 66, 563–600.

Goldfarb, A., Xiao, M., 2011. Who thinks about the competition? Managerial ability and strategic entry in US local telephone markets. *American Economic Review*, 101, 3130–3161.

Gomes, A., 2000. Going public without governance: Managerial reputation effects. *Journal of Finance*, 55, 615–646.

Graffin, S.D., Wade, J.B., Porac, J.F., McNamee, R.C., 2008. The impact of CEO status diffusion on the economic outcomes of other senior managers. *Organization Science*, 19, 457–474.

Graham, J.R., Harvey, C.R., Rajgopal, S., 2005. The economic implications of corporate financial reporting. *Journal of Accounting Economics*, 40, 3–73.

Grant, R. M., 2003. Strategic planning in a turbulent environment: Evidence from the oil majors. *Strategic Management Journal*, 24, 491–517.

Gray, S.J., Meek, G.K., Roberts, C.B., 1995. International capital market pressures and voluntary annual report disclosures by US and UK multinationals. *Journal of International Financial Management Accounting*, 6, 43–68.

Grosfeld, I., Tressel, T., 2002. Competition and ownership structure: Substitutes or complements? Evidence from the Warsaw Stock Exchange. *Economics of Transition*, 10, 525–551.

Grüning, M., 2011. Artificial intelligence measurement of disclosure (AIMD). *European Accounting Review*, 20, 485–519.

Gu, F., Li, J.Q., 2007. The credibility of voluntary disclosure and insider stock transactions. *Journal of Accounting Research*, 45, 771–810.

Guan, J.X., Li, O.Z., Ma, J., 2018. Managerial ability and the shareholder tax sensitivity of dividends. *Journal of Financial and Quantitative Analysis*, 53, 335–364.

Gul, F.A., Khedmati, M., Lim, E.K., Navissi, F., 2018. Managerial ability, financial distress, and audit fees. *Accounting Horizon*, 32, 29–51.

Gul, F.A., Leung, S., 2004. Board leadership, outside directors' expertise and voluntary corporate disclosures. *Journal of Accounting and Public Policy*, 23, 351–379.

Hambrick, D.C., 2007. Upper echelons theory: An update. *Academy of management review*, 32, 334–343.

Hambrick, D.C., Mason, P.A., 1984. Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9, 193–206.

Hamrouni, A., Benkraiem, R., Karmani, M., Karmani, 2017. Voluntary information disclosure and sell-side analyst coverage intensity. *Review of Accounting and Finance*, 16, 260–280.

Haniffa, R., Hudaib, M., 2006. Corporate governance structure and performance of Malaysian listed companies. *Journal of Business Finance and Accounting*, 33, 1034–1062.

Haji, A.A., Ghazali, N.A.M., 2012. The influence of the financial crisis on corporate voluntary disclosure: Some Malaysian evidence. *International Journal of Disclosure Governance*, 9, 101–125.

Harper, J., Kemper, K.J., Sun, L., 2019. Managerial ability and bond rating changes. *Financial Markets, Institutions and Instruments*, 28, 381–401.

Hart, O.D., 1983. The market mechanism as an incentive scheme. *Bell Journal of Economics*, 14, 366–382.

Hasan, M.M., 2020. Readability of narrative disclosures in 10-K reports: Does managerial ability matter? *European Accounting Review*, 29, 147–168.

Hassan, M.K., Lahyani, F.E., 2019. Media, independent non-executive directors and strategy disclosure by non-financial listed firms in the UAE. *Corporate Governance: International Journal of Business in Society*, 20, 216–223.

Hayes, R.M., Schaefer, S., 1999. How much are differences in managerial ability worth?

Journal of Accounting Economics, 27, 125–148.

Healy, P.M., Palepu, K.G., 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31, 405–440.

Hellmann, T., Puri, M., 2000. The interaction between product market and financing strategy: The role of venture capital. *Review of Financial Studies*, 13, 959–984.

Higgins, R.B., Bannister, B.D., 1992. How corporate communication of strategy affects share price. *Long Range Planning*, 25, 27–35.

Higgins, R.B., Diffenbach, J., 1985. The impact of strategic planning on stock prices. *Journal of Business Strategy*, 6, 64–72.

Higgins, R.B., Diffenbach, J., 1989a. Communicating corporate strategy—The payoffs and the risks. *Long Range Planning*, 22, 133–139.

Higgins, R.B., Diffenbach, J., 1989b. Strategic credibility—The basis of a strong share price. *Long Range Planning*, 22, 10–18.

Holcomb, T.R., Holmes Jr, R.M., Connelly, B.L., 2009. Making the most of what you have: Managerial ability as a source of resource value creation. *Strategic Management Journal*, 30, 457–485.

Hotz, V.J., Xiao, M., 2013. Strategic information disclosure: The case of multiattribute products with heterogeneous consumers. *Economic Inquiry*, 51, 865–881.

Htay, S.N.N., 2012. Corporate governance and strategic information disclosure in Malaysian listed banks: Panel data analysis. *International Review of Business Research Papers*, 8, 196–210.

Huang, X., Sun, L., 2017. Managerial ability and real earnings management. *Advances in Accounting*, 39, 91–104.

Huang, Y., Jennings, R., Yu, Y., 2017. Product market competition and managerial disclosure of earnings forecasts: Evidence from import tariff rate reductions. *Accounting Review*, 92, 185–207.

Huddart, S., 1993. The effect of a large shareholder on corporate value. *Management Science*, 39, 1407–1421.

Institutional Investor, 2020. The All-America Executive Team. *https://www.institutionalinvestor.com/research/9814/The-All-America-Executive-Team*.

Ireland, R.D., Hirc, M.A., 1992. Mission statements: Importance, challenge, and

recommendations for development. *Business Horizons*, 35, 34-42.

Jackson, A.R., 2005. Trade generation, reputation, and sell-side analysts. *Journal of Finance*, 60, 673–717.

Jansen, J., 2010. Strategic information disclosure and competition for an imperfectly protected innovation. *Journal of Industrial Economics*, 58, 349–372.

Januszewski, S.I., Köke, J., Winter, J.K., 2002. Product market competition, corporate governance and firm performance: An empirical analysis for Germany. *Research in Economics*, 56, 299–332.

Jensen, M.C., Meckling, W.H., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305–360.

Jian, M., Lee, K.W., 2011. Does CEO reputation matter for capital investments? *Journal of Corporate Finance*, 17, 929–946.

John, K., Litov, L., Yeung, B., 2008. Corporate governance and risk-taking. *Journal of Finance*, 63, 1679–1728.

John, K., Ravid, S.A., Sunder, J., 2017. Managerial ability and success: Evidence from the career paths of film directors. *Journal of Corporate Finance*, 44, 425–439.

Jones, D. A., 2007. Voluntary disclosure in R&D-intensive industries. *Contemporary Accounting Research*, 24, 489–522.

Kaplan, S.N., Zingales, L., 1997. Do investment-cash flow sensitivities provide useful measures of financing constraints? *Quarterly Journal of Economics*, 112, 169–215.

Kaplan, S., 2011. Strategy and PowerPoint: An inquiry into the epistemic culture and machinery of strategy making. *Organization Science*, 22, 320–346.

Katz, R., 1974. Skills of an Effective Administrator. *Harvard Business Review*, September.

Kelton, A.S., Yang, Y.W., 2008. The impact of corporate governance on internet financial reporting. *Journal of Accounting and Public Policy*, 27, 62–87.

Khoo, J., Cheung, A., 2021. Managerial ability and trade credit. *Financial Review*, 57,1–23.

Khurana, I.K., Moser, W.J., Raman, K., 2018. Tax avoidance, managerial ability, and investment efficiency. *Abacus*, 54, 547–575.

Koester, A., Shevlin, T., Wangerin, D., 2017. The role of managerial ability in corporate tax avoidance. *Management Science*, 63, 3285–3310.

Kohut, G.F., Segars, A.H., 1992. The president's letter to stockholders: An examination

of corporate communication strategy. *Journal of Business Communication*, 29, 7–21.

Köke, J.F., Renneboog, L., 2005. Do corporate control and product market competition lead to stronger productivity growth? Evidence from market-oriented blockholder-based governance regimes. *Journal of Law and Economics*, 48, 475–516.

Konijn, S.J., Kräussl, R., Lucas, A., 2011. Blockholder dispersion and firm value. *Journal of Corporate Finance*, 17, 1330–1339.

Krishnan, G.V., Wang, C., 2015. The relation between managerial ability and audit fees and going concern opinions. *Auditing: A Journal of Practice Theory*, 34, 139–160.

Lee, H., Smith, K.G., Grimm, C.M., Schomburg, A., 2000. Timing, order and durability of new product advantages with imitation. *Strategic Management Journal*, 21, 23–30.

Leland, H., Pyle, D., 1977. Informational asymmetries, financial structure, and financial intermediation. *Journal of Finance*, 32, 371–387.

Leuthesser, L., Kohli, C., 1997. Corporate identity: The role of mission statements. *Business Horizons*, 40, 59-66.

Li, J., Mangena, M., Pike, R., 2012. The effect of audit committee characteristics on intellectual capital disclosure. *British Accounting Review*, 44, 98–110.

Li, X., 2010. The impacts of product market competition on the quantity and quality of voluntary disclosures. *Review of Accounting Studies*, 15, 663–711.

Li, Z., Wang, P., Wu, T., 2021. Do foreign institutional investors drive corporate social responsibility? Evidence from listed firms in China. *Journal of Business Finance and Accounting*, 48, 338–373.

Liao, T.L., Lin, W.C., 2017. Corporate governance, product market competition, and the wealth effect of R&D spending changes. *Financial Management*, 46, 717–742.

Lim, S., Matolcsy, Z., Chow, D., 2007. The association between board composition and different types of voluntary disclosure. *European Accounting Review*, 16, 555–583.

Lin, Z., Patel, P., Oghazi, P., 2021. The value of managerial ability and general ability for inventor CEOs. *Journal of Business Research*, 135, 78–98.

Loughran, T., McDonald, B., 2011. When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *Journal of Finance*, 66, 35–65.

Louie, J., Ahmed, K., Ji, X.D., 2019. Voluntary disclosures practices of family firms in Australia. *Accounting Research Journal*, 32, 273–294.

Lu, H.Y., Tucker, J., 2012. Nonearnings corporate guidance. *Financial Management*, 41, 947–977.

March, J.G., Shapira, Z., 1987. Managerial perspectives on risk and risk taking. *Management Science*, 33, 1404–1418.

Marston, C., 2008. Investor relations meetings: evidence from the top 500 UK companies. *Accounting and Business Research*, 38, 21–48.

Mavis, C.P., Richter, A., Landau, C., Schmidt, S.L., Simons, T., Steinbock, K., 2019. What happens when companies (don't) do what they said they would? Stock market reactions to strategic integrity. *European Management Review*, 16, 815-831.

Meek, G.K., Roberts, C.B., Gray, S.J., 1995. Factors influencing voluntary annual report disclosures by US, UK and continental European multinational corporations. *Journal of International Business Studies*, 26, 555–572.

Menicucci, E., 2018. Exploring forward-looking information in integrated reporting. *Journal of Applied Accounting Research*, 19, 102–121.

Milbourn, T.T., 2003. CEO reputation and stock-based compensation. *Journal of Financial Economics*, 68, 233–262.

Milgrom, P., 1981. Good news and bad news: representation theorems and applications. *Bell Journal of Economics*, 12, 380–391.

Miller, P., Bahnson, P., 2002. Quality financial reporting. *New York: McGraw Hill Professional*.

Mishra, D.R., 2014. The dark side of CEO ability: CEO general managerial skills and cost of equity capital. *Journal of Corporate Finance*, 29, 390–409.

Mitchell, J., 2006. Selective reporting of financial ratios in Australian annual reports: Evidence from a voluntary reporting environment. *Accounting Research Journal*, 19, 5–30.

Mitra, S., Jaggi, B., Al-Hayale, T., 2019. Managerial overconfidence, ability, firm-governance and audit fees. *Review of Quantitative Finance and Accounting*, 52, 841–870.

Mitton, T., 2002. A cross-firm analysis of the impact of corporate governance on the East Asian financial crisis. *Journal of Financial Economics*, 64, 215–241.

Moran, P., Ghoshal, S., 1999. Markets, firms, and the process of economic development. *Academy of Management Review*, 24, 390–412.

Morck, R., Shleifer, A., Vishny, R.W., 1988. Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20, 293–315.

Morck, R., Shleifer, A., Vishny, R., 1990. Do managerial objectives drive bad acquisitions? *Journal of Finance*, 45, 31–50.

Morris, R.D., Tronnes, P.C., 2018. The determinants of voluntary strategy disclosure: An international comparison. *Accounting Research Journal*, 31, 423–441.

Muslu, V., Radhakrishnan, S., Subramanyam, K., Lim, D., 2015. Forward-looking MD&A disclosures and the information environment. *Management Science*, 61, 931-948.

Nalebuff, B.J., Stiglitz, J.E., 1983. Prizes and incentives: Towards a general theory of compensation and competition. *Bell Journal of Economic*s, 14, 21–43.

Nickell, S., Nicolitsas, D., Dryden, N., 1997. What makes firms perform well? *European Economic Review*, 41, 783–796.

Noe, C., 1999. Voluntary disclosures and insider transactions. *Journal of Accounting and Economics*, 27, 305–327

Noy, E., 1998. Total business strategy—the missing link. *Long Range Planning*, 31, 927-932.

Nuthall, P., 2001. Managerial ability—a review of its basis and potential improvement using psychological concepts. *Agricultural Economics*, 24, 247–262.

Oskouei, Z. H., Sureshjani, Z. H., 2021. Studying the relationship between managerial ability and real earnings management in economic and financial crisis conditions. *International Journal of Finance and Economics*, 26, 4574–4589.

Owusu-Ansah, S., 1998. The impact of corporate attributes on the extent of mandatory disclosure and reporting by listed companies in Zimbabwe. *International Journal of Accounting*, 33, 605–631.

Palepu, K., 1986. Predicting takeover targets: A methodological and empirical analysis. *Journal of Accounting and Economics*, 8, 3–36.

Park, S.Y., Yoo, K.H., 2016. CEO career concerns and voluntary disclosure. *Journal of Applied Business Research*, 32, 1603–1628.

Pathan, S., 2009. Strong boards, CEO power and bank risk-taking. *Journal of Banking and Finance*, 33, 1340–1350.

Pearce, J. A., Zahra, S. A., 1991. The relative power of CEOs and boards of directors: Associations with corporate performance. *Strategic management journal*, 12,

135–153.

Petkevich, A., Prevost, A., 2018. Managerial ability, information quality, and the design and pricing of corporate debt. *Review of Quantitative Finance and Accounting*, 51, 1033–1069.

Philippe, D., Durand, R., 2011. The impact of norm-conforming behaviours on firm reputation. *Strategic Management Journal*, 32, 969–993.

Porter, M.E., 1996. What is strategy? *Harvard business review*, 74, 61-78.

Qu, W., Leung, P., Cooper, B., 2013. A study of voluntary disclosure of listed Chinese firms–a stakeholder perspective. *Managerial Auditing Journal*, 28, 261–294

Rajgopal, S., Shevlin, T., Zamora, V., 2006. CEOs' outside employment opportunities and the lack of relative performance evaluation in compensation contracts. *Journal of Finance*, 61, 1813–1844.

Rindova, V.P., Fombrun, C.J., 1999. Constructing competitive advantage: The role of firm-constituent interactions. *Strategic Management Journal*, 20, 691–710.

Samaha, K., Dahawy, K., Hussainey, K., Stapleton, P., 2012. The extent of corporate governance disclosure and its determinants in a developing market: The case of Egypt. *Advances in Accounting*, 28, 168–178.

Sánchez, I.M.G., Domínguez, L.R., Alvarez, I.G., 2011. Corporate governance and strategic information on the internet: A study of Spanish listed companies. *Accounting, Auditing and Accountability Journal*, 24, 471–501.

Santema, S., Hoekert, M., Van De Rijt, J., Van Oijen, A., 2005. Strategy disclosure in annual reports across Europe: A study on differences between five countries. *European Business Review*, 17, 352–366.

Santema, S., Van de Rijt, J., 2001. Strategy disclosure in Dutch Annual Reports. *European Management Journal*, 19, 101–108.

Schadewitz, H.J., Blevins, D.R., 1998. Major determinants of interim disclosures in an emerging market. *American Business Review*, 16, 41–55.

Scharfstein, D., 1988. Product-market competition and managerial slack. *RAND Journal of Economics*, 19, 147–155.

Schmidt, K.M., 1997. Managerial incentives and product market competition. *Review of Economic Studies*, 64, 191–213.

Shang, C., 2021. Dare to play with fire? Managerial ability and the use of short-term debt. *Journal of Corporate Finance*, 70, 102065.

Shapiro, C., 1983. Premiums for high quality products as returns to reputations. *Quarterly Journal of Economics*, 98, 659–679.

Sieber, T., Weißenberger, B.E., Oberdörster, T., Baetge, J., 2014. Let's talk strategy: The impact of voluntary strategy disclosure on the cost of equity capital. *Business Research*, 7, 263–312.

Skinner, D., 1994. Why firms voluntarily disclose bad news. *Journal of Accounting Research*, 32, 38–61.

Song, W.L., Wan, K.M., 2019. Does CEO compensation reflect managerial ability or managerial power? Evidence from the compensation of powerful CEOs. *Journal of Corporate Finance*, 56, 1–14.

Srinivasan, S., 2005. Consequences of financial reporting failure for outside directors: Evidence from accounting restatements and audit committee members. *Journal of Accounting Research 43*, 291–34.

Sun, L., 2016. Managerial ability and goodwill impairment. *Advances in Accounting*, 32, 42–51.

Sukhari, A., De Villiers, C., 2019. The influence of integrated reporting on business model and strategy disclosures. *Australian Accounting Review*, 29, 708–725.

Tetlock, P.C., 2007. Giving content to investor sentiment: The role of media in the stock market. *Journal of Finance*, 62, 1139–1168.

Thakor, A.V., 2015. Strategic information disclosure when there is fundamental disagreement. *Journal of Financial Intermediation*, 24, 131–153.

Trueman, B., 1986. Why do managers voluntarily release earnings forecasts? *Journal of Accounting Economics*, 8, 53–71.

Turki, A., Sedrine, N.B., 2012. Ownership structure, board characteristics and corporate performance in Tunisia. *International Journal of Business and Management*, 7, 121–132.

Uyar, A., Kılıç, M., 2012. Value relevance of voluntary disclosure: evidence from Turkish firms. *Journal of Intellectual Capital*, 13, 363–376.

Verrecchia, R.E., 2001. Essays on disclosure. *Journal of Accounting and Economics*, 32, 97–180.

Verrecchia, R.E., 1983. Discretionary disclosure. *Journal of Accounting and Economics*, 5, 179–194.

von Alberti-Alhtaybat, L., Hutaibat, K., Al-Htaybat, K., 2012. Mapping corporate

disclosure theories. *Journal of Financial Reporting and Accounting*, 10, 73–94.

Wagenhofer, A., 1990. Voluntary disclosure with a strategic opponent. *Journal of Accounting and Economics*, 12, 341–363.

Wang, K., Sewon, O., Claiborne, M.C., 2008. Determinants and consequences of voluntary disclosure in an emerging market: Evidence from China. *Journal of International Accounting, Auditing and Taxation*, 17, 14–30.

Wang, Z., Chen, M.H., Chin, C.L., Zheng, Q., 2017. Managerial ability, political connections, and fraudulent financial reporting in China. *Journal of Accounting and Public Policy*, 36, 141–162.

Warner, J., Watts, R., Wruck, K., 1988. Stock prices and top management changes. *Journal of Financial Economics*, 20, 461–493.

Weigelt, K., Camerer, C., 1988. Reputation and corporate strategy: A review of recent theory and applications. *Strategic Management Journal*, 9, 443–454.

Weisbach,M., 1988. Outside directors and CEO turnover. *Journal of Financial Economics*, 20, 431–461.

Weng, P.S., Chen, W.Y., 2017. Doing good or choosing well? Corporate reputation, CEO reputation, and corporate financial performance. *North American Journal of Economics Finance*, 39, 223–240.

Wenzel, M., Koch, J., 2018. Strategy as staged performance: A critical discursive perspective on keynote speeches as a genre of strategic communication. *Strategic Management Journal*, 39, 639–663.

Whittington, R., Yakis-Douglas, B., 2012. Strategic disclosure: strategy as a form of reputation management. *The Oxford Handbook of Corporate Reputation*. *Oxford: Oxford University Press*, 402–419.

Whittington, R., Yakis-Douglas, B., Ahn, K., 2016. Cheap talk? Strategy presentations as a form of chief executive officer impression management. *Strategic Management Journal*, 37, 2413–2424.

Xiao, H., Yuan, J., 2007. Ownership structure, board composition and corporate voluntary disclosure: Evidence from listed companies in China. *Managerial Auditing Journal*, 22, 604–619.

Xu, X., Wang, F., Chen, X., Yang, G., 2021. Does managerial ability matter for cross-border M&As: Evidence from Chinese listed firms. *Journal of Asian Economics*, 74, 101302.

Yuan, Y., Tian, G., Lu, L.Y., Yu, Y., 2019. CEO ability and corporate social responsibility. *Journal of Business Ethics*, 157, 391–411.

Yung, K., Chen, C., 2018. Managerial ability and firm risk-taking behaviour. *Review of Quantitative Finance and Accounting*, 51, 1005–1032.

Zaini, S.M., Sharma, U., Samkin, G., Davey, H., 2020. Impact of ownership structure on the level of voluntary disclosure: A study of listed family-controlled companies in Malaysia. *Accounting Forum*, 44, 1–34.

APPENDICES

Appendix 1: Document-Level Information Extraction (Word Patterns)

Strategic indicator words list (Agapova and Volkov, 2019) and examples of strategic information disclosure

Strategic					Confirm Strategic	
our strategy is will be our strategy preparing to propose strategy we intend to will focus on will be part of our strategy will be announcing working on strategy new strategy strategic goal strategic aim strategic decisions strategic plan strategic imperatives strategic initiatives strategic opportunity strategic will be will be focused on our strategy is going to be can expect			our plan is to we plan to out plan will be we aim to our aim is to we are preparing to looking towards we are aiming to will be focusing on will implement would implement will be implementing going to implement		continue to carry on our existing reflecting our as before previously remain focused like we did keeping with our strategy committed to commitment made a commitment been our strategy maintain preserve on-going in the past still focused to be focused in validating our strategy similar fashion similarly keep on	
M&A	**Cost**	**Divest**	**Consolidate**	**Growth**	**R&D**	**Move**
acquire acquisition takeover merger merge buy company	reducing cost cost effective cost efficient cost advantage cost recovery reducing headcount	divestiture reduce footprint divestment divest conduct sale sell operation	consolidate consolidated consolidations adjusting our combining outsource	expand business expand production expand footprint expand capability increase business increase output	research and development new product development new package new product	moving production move production moving offices redeploy move offices relocating

alliance acquire company to acquire pursue acquisition pursue merger search for acquisition search for merger	reduction in headcount reduce overhead cut cost reduction in capital reduction of workforce less workers reduce number of employees cost benefit cost optimization down the cost automate cut headcount amortization cost reduction	sell business strip off sold off closure unit sale sale business spin-off carve out	reduction of complexity centralizing centralize suspend operation integrate integration of unify restructuring management changes will be divided will be split restructure changes in management	increase production increase capacity increase growth build out increase market share growth project increase investment further investment additional growth to expand expansion	development new application development design new products design new applications new product lines R&D R&D investment innovation innovative solution new technology product expansion improvement opportunities invest in advance technologies invest in advancing technologies	move manufacturing

Appendix 2: Examples of Strategic Information Disclosure (from Corporate Transcripts)

R&D:

1. **Our strategy really is** about developing a local capability around technical capability, product **innovation** capability and gradually building out our supply chain capability so we can become more and more competitive in the China market. ——— 3M Company at Goldman Sachs Global Industrials Conference. November 5, 2009

2. We offered up a **strategic plan** that said we're going to, you know, get back to doing the basics within the peanut butter category with the commitment to advertising support and a **commitment to innovation** and not only just innovation in the jar but innovation out of the jar. ——— Hormel Foods Corporation Investor Day. June 11, 2015

3. But, I also want to point out that we've **made a commitment to be focused in** our **research and development** activities, and so once again in 2016, we out-licensed what we think is a very promising molecule, but a molecule in asthma where we felt it was probably better off in the hands of Genentech developing it than inside Amgen. ——— Amgen Inc. at JPMorgan Healthcare Conference. January 9, 2017

4. We also **continue to** address ROC in underperforming businesses, shutting down assets that do not have sustainable competitive advantage over the long term and reprioritizing **R&D investments.** ——— Q1 2013 The Dow Chemical Company Earnings Conference Call. April 25, 2013

M&A:

1. We will **continue to search for acquisition** opportunities in North America, generally targeting those bolt-on types of acquisitions with annual revenues in the $25 million to $150 million range. ——— Genuine Parts at Integrated Corporate Relations (ICR) XCHANGE. January 14, 2014

2. There are a number of strategically compelling factors involved in **our decision to acquire** this wonderful company, starting with our culture, purpose and strategy. ——— Fortive Corp to Acquire the Advanced Sterilization Business from Johnson & Johnson M&A Call. June 6, 2018

Cost:

1. We **will be focusing on reducing cost** and complexity of the business to ensure we can deliver winning vehicles at a price that works for the customer and a cost that works for us. ——— Q2 2013 General Motors Company Earnings Conference Call. July 25, 2013

2. The improving economic outlook combined with what appears to be a very solid execution on **our growth strategy** due to our organization structure and innovative business models enabled Cisco to move into 30-plus market adjacencies while reducing non-GAAP operating expenses by 10% year-over-year and also **reducing headcount.** ——— Q1 2010 Cisco Systems Earnings Conference Call. November 4, 2009

3. Within this segment, we **continue to** see strong focus on **cost optimization**, initiatives around regulatory compliance and risk management, and the adoption and integration of SMAC solutions to align with shifts in customer preferences. ——— Q3 2013 Cognizant Technology Solutions Earnings Conference Call. November 5, 2013

Divest:

1. Throughout the **divestiture** process, we have been **committed to** working with the Indonesian government so the **divestiture** provisions, as defined in the contract of work can be honored. ——— Q2 2009 Newmont Mining Corporation Earnings Conference Call. July 23, 2009

2. So we are going to **continue to look for opportunities to reduce footprint**. ———The Boeing Company at Sanford C Bernstein Strategic Decisions Conference. May 29, 2014

3. Finally, as **we prepare for** the **spin-off**, we will continue to educate the investment community about our business and how we plan to develop CareFusion into a premier — into the premier bellwether medical technology leader. ——— CareFusion Analyst and Investor Day. June 2, 2009

Consolidate:

1. For the full year, we **continue to** expect **restructuring** charges of approximately $150 million, driven by footprint **consolidations** from acquisitions and structural improvements. ——— Q2 2017 TE Connectivity Ltd Earnings Call. April 26, 2017

2. JOHN RAMIL: Well, goal number one is to deliver on performance of our existing utility portfolio and to move forward with **our plans for** the **integration of** New Mexico Gas Company. ——— Q3 2014 TECO Energy Inc. Earnings Call. October 31, 2014

3. This is an area where we think there'll be multiyear benefits as we **continue to integrate** the plants that we purchased and achieve operational efficiencies by combining the plant network that now numbers over 80 around the world. ——— Bemis Company, Inc. at Longbow Research Annual Paper & Packaging Investor Conference. June 22, 2010

Growth:

1. As we expect to grow it organically and improve our mix with our innovative new product launches; we expect to **continue to** accelerate growth beyond the core, extend and **expand businesses**; and we expect margin expansion with the execution of ongoing cost productivity programs, additional cost and capacity reductions; as well as improved price mix and the impact on our margins. ——— Q4 2013 Whirlpool Corporation Earnings Conference Call. January 30, 2014

2. Our sales growth has come from both existing and new customers, as we **continue to increase market share**, we continue to enhance our selling capabilities and improve our parts offerings. ——— Q4 2010 AutoZone Inc. Earnings Conference Call. September 21, 2010

3. So it has been a significant component of **our phosphate go-to-market strategy** and we continued to see that increasing, and we will be looking for other opportunities to **expand production**. ——— Q1 2013 The Mosaic Company Earnings Conference Call. October 2, 2012

Move:

1. **In this strategy**, we've been **moving production** closer to the customer to reduce total miles driven. ——— Dean Foods at CAGNY Conference. February 19, 2010

2. We're opening more new stores, which cause a sister-store impact and expanding and **relocating** some very strong stores, which **continue to** perform very well, but haven't been grand reopened long enough to be into our identical store base yet. ——— Q4 2016 The Kroger Co Earnings Call. March 2, 2017

3 And we expect to continue to see margin improvement as we **continue to** backward **integrate** with our own API manufacturing, as well as continue to **move manufacturing** to lower-cost plants now in India, as well as in Malta. ——— Watson Pharmaceuticals, Inc. at JPMorgan Healthcare Conference. January 13, 2010

More categories:

Divest; R&D:

1. So when we gave our original guidance in January this year, we said that this year would be like other years in that **we're going to** buy and **sell businesses**, we're going to record gains and charges,

we’re going to invest in **innovation**, and continue to rebalance our work force to future opportunities. ——— Q1 2013 International Business Machines Earnings Conference Call. April 18, 2013

Growth; Cost:

2. **Our go-to-market strategy**, we’re working through a lot of different areas right now around the channel and making sure that we can simplify our channel program to **drive higher productivity** and probably some **cost optimization** across that part of go-to-market. ——— Citrix Systems Inc. at William Blair Growth Stock Conference. June 13, 2017

Appendix 3: Definitions of Variables

Variables	Definition	Data source
Dependent variables		
SID7	The disclosure score for strategic information obtained after analysing a firm's transcripts. Based on the strategic indicator words list (Agapova and Volkov, 2019), the releases of companies containing strategic information are classified into the 7 following seven categories: mergers and acquisition, research and development, consolidation, divestitures, cost control, move (offices, facilities), and growth (expansion). Specifically, it assigns a score of 0 if the company makes no strategic information disclosure in any category of releases in a given year, 1 if the firm provides strategic information belonging to one category, 2 if the firm provides strategic information in two categories, and so on. As a result, the volume of strategic information disclosure for a company is measured by the ratio of the aggregation score obtained from each category divided by the maximum potential score (7) applicable to that company. The total score for each company ranges from 0 to 1	Fair Disclosure Wire (FDW)
SID	The disclosure score for strategic information obtained after analysing a firm's transcripts. The total score for each company ranges from 0 to 7.	FDW
Key variables		
MOWN	Managerial ownership, measured by the percentage of ordinary shares held by the CEO and executive directors.	SEC
BOLCK	Blockholder ownership, measured by the percentage of ordinary shares held by substantial shareholders who hold 5% or more of the company's ordinary shares.	SEC
HHI	Product market competition, measured by Herfindahl-Hirschman index, calculated as the sum of the squared market shares of all firms in each industry. Market shares calculated by firm sales.	Compustat
HHI (high)	A dummy variable that equals 1 if the HHI of firm i in year t lies in the highest tercile of its empirical distribution, and 0 otherwise.	Compustat
HHI (medium)	A dummy variable that equals 1 if the HHI of firm i in year t lies in the medium tercile of its empirical distribution, and 0 otherwise.	Compustat
HHI (low)	A dummy variable that equals 1 if the HHI of firm i in year t lies in the lowest tercile of its empirical distribution, and 0 otherwise.	Compustat
MA	Managerial ability score, developed by Demerjian et al. (2012).	Compustat
Rank	Decile ranks of MA.	Compustat
Historical ROA	Five-year industry-adjusted return on assets.	Compustat
AMA_Score	The company's score from the "America's Most Admired Companies" list of the year. Set to zero if the firm does not appear on the list. A higher company score indicates a higher corporate reputation.	Fortune
AMA_List	A dummy variable of corporate reputation, which takes a value of "1" if the company appears in the "America's Most Admired Companies" list that year.	Fortune
AMA_Tenure	Proxy for corporate long-term reputation, measured as the number of sample years to date during which the company appears on the "America's Most Admired Companies" list.	Fortune
CEO_Tenure	The number of years the executive has been CEO of the company.	ExecuComp
Best_CEO	A dummy variable of CEO reputation, which takes a value of "1" if the CEO_Tenure above the sample median.	ExecuComp
Fortune500	A dummy variable of corporate reputation, which takes a value of "1" if the company is appears on the Fortune 500 list that year.	Fortune
LnRank	The natural logarithm of the Fortune 500 rank.	Fortune
Performance	One-year industry-adjusted firm performance measured by the difference between the company's average monthly stock returns and its industry's (based on the two-digit SIC code) average monthly return over one year	CRSP
Star_CEO	A dummy variable of CEO reputation, which takes a value of "1" if the CEO is appears on Institutional Investor's Best CEOs list that year.	Institutional Investor
Positive	The number of positive words scaled by total content words contained in strategic information-related sentences extracted from all transcripts during year t by firm i.	FDW
Negative	The number of negative words scaled by total content words contained in strategic information-related sentences extracted from all transcripts during year t by firm i.	FDW

Net Positive	Net positive measured as positive words minus negative words scaled by total content words contained in strategic information-related sentences extracted from all transcripts during year t by firm i.	FDW
Other Variables		
ROA	Profitability, measured by the return on assets.	Compustat
Lev	Corporate leverage, measured by the debt to total assets ratio.	Compustat
Liquidity	Current ratio of the firm, calculated by total current assets over total current liabilities.	Compustat
R&D_Growth	Research and development (R&D) expenditures scaled by total assets.	Compustat
Size	Natural logarithm of a firm's total assets.	
MTB	Market to book ratio.	Compustat
PE	Price to earnings ratio.	Compustat
E/S	Corporate operation profitability, measured as the company's earnings before interests, taxes, depreciation, and amortization, divided by total sales.	Compustat
Fin Cons	A dummy variable of companies' financial constraint, which takes a value of "1" if the company has a dividend payout ratio (calculated as dividends/net profit) above the sample median, and 0 otherwise.	Compustat
Analyst	Number of analysts following in a year.	Compustat
BoardSize	Number of directors on the board in a year.	Datastream
Meetings	Number of board meetings in a year.	Datastream
R&D intensity	Research and development (R&D) expenditures scaled by total assets.	Compustat
Beta	This proxy measures the systematic risk of the firm.	Datastream
Independence	The percentage of independent board members.	Datastream
Firm age	Natural logarithm of one plus the number of years the company has been in Compustat.	Compustat
Executive age	Natural logarithm of the age of the CEO.	Execucomp
Compensation	Natural logarithm of the total compensation of the CEO.	Execucomp
FFR	Four-firm concentration ratio is a proxy for product market competition, calculated as the proportion of total sales in an industry produced by the four largest firms in an industry.	Compustat
FFR (high)	A dummy variable that equals 1 if the FFR of firm i in year t lies in the highest tercile of its empirical distribution, and 0 otherwise.	Compustat
FFR (medium)	A dummy variable that equals 1 if the FFR of firm i in year t lies in the medium tercile of its empirical distribution, and 0 otherwise.	Compustat
FFR (low)	A dummy variable that equals 1 if the FFR of firm i in year t lies in the lowest tercile of its empirical distribution, and 0 otherwise.	Compustat
HHI (dummy)	HHI (dummy) is a dummy variable that equals 1 if the company with a HHI index above the sample median, and 0 otherwise.	Compustat
MOWN (dummy)	MOWN (dummy) is a dummy variable that equals 1 if the company's management ownership is above the sample median, and 0 otherwise.	SEC
BLOCK (dummy)	BLOCK (dummy) is a dummy variable that equals 1 if the company's blockholder ownership is above the sample median, and 0 otherwise.	SEC
M&A	A dummy variable that equals 1 if a firm discloses strategic information on mergers and acquisitions, and 0 otherwise.	FDW
Cost	A dummy variable that equals 1 if a firm discloses strategic information on cost control, and 0 otherwise.	FDW
Divest	A dummy variable that equals 1 if a firm discloses strategic information on divestitures, and 0 otherwise.	FDW
Consolidate	A dummy variable that equals 1 if a firm discloses strategic information on consolidation, and 0 otherwise.	FDW
Growth	A dummy variable that equals 1 if a firm discloses strategic information on growth (expansion), and 0 otherwise.	FDW
R&D	A dummy variable that equals 1 if a firm discloses strategic information on research and development, and 0 otherwise.	FDW
Move	A dummy variable that equals 1 if a firm discloses strategic information on moving (offices, facilities), and 0 otherwise.	FDW
Firm value	Tobin's Q ratio. Tobin's Q is measured by the book value of assets minus the book value of equity, plus the market value of equity, all divided by the book value of assets.	Compustat
Access to finance (KZ index)	$KZ\ \ index_{i,t} = -1.002 * \frac{CF_{i,t}}{Assets_{i,t-1}} - 39.368 * \frac{CashDividend_{i,t}}{Assets_{i,t-1}} - 1.315 * \frac{CashBalances_{i,t}}{Assets_{i,t-1}} + 3.139 * Leverage_{i,t}$	Compustat