EKONOMI OCH SAMHÄLLE
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Exploring Mandatory Sustainability Reporting in China

Economic Implications and Regulatory Effectiveness

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Economic Implications and Regulatory Effectiveness

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Exploring mandatory sustainability reporting in China: Economic implications and regulatory effectiveness

Key words: mandatory sustainability reporting, firm risk, firm profitability, reporting substantiveness

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To the women who are fighting for their rights

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TABLE OF CONTENTS

PART A: BACKGROUND, THEORY AND SUMMARY OF THE ESSAYS v

1 INTRODUCTION 1

2 LITERATURE REVIEW 5

2.1 Sustainability reporting and firm risk 5

2.2 Sustainability reporting and firm profitability 6

2.3 Sustainability reporting and institutional theory 6

3 SUMMARY OF THE ESSAYS 8

3.1 Essay 1: Does mandatory sustainability reporting reduce firm risk? Evidence from China 8

3.2 Essay 2: Does mandatory sustainability reporting affect firm profitability? Evidence from China 9

3.3 Essay 3: Walking the talk: symbolic and substantive sustainability reporting . 9

4 CONTRIBUTIONS 12

REFERENCES 14

PART B: THE ESSAYS 20

TABLES

Table 1 Summary of the essays comprising the dissertation 11

PART A: BACKGROUND, THEORY AND SUMMARY OF THE ESSAYS

1 INTRODUCTION

Sustainability has a broader meaning in Social Science whereas in Accounting and Finance, it primarily focuses on the environmental, social and governance (ESG) aspects. Therefore, sustainability reporting refers to the measurement and communication of organizational environmental and social impacts and corporate governance. Sustainability reporting has a history that dates back to the 20th century. In the early stage, sustainability reports were often created without adherence to any external reporting guidelines and were commonly used for enhancing public image (Tschopp & Huefner, 2015). The environmentalism and sustainability movements in the late 20th century led to the rising awareness of corporate social responsibility that pressured firms to do "good" while doing business (Du et al., 2010; Flammer, 2013). The shift requires firms to invest sustainably. With the growing interest in sustainable investment, the demand for sustainability-related information has significantly increased (Cohen et al., 2015; Gao et al., 2016). Responding to this demand, many firms disclose sustainability-related information in a stand-alone report or in their annual reports. Nevertheless, such disclosure is considered voluntary which brings about concerns regarding credibility and comparability. Some firms provide generic or boilerplate reports with little value (Christensen et al., 2019) and some engage in selective disclosure (Roszkowska-Menkes et al., 2024). In response to these challenges, some standard setters establish reporting standards and stakeholders continuously pressure firms to increase the breadth and detail of information needed to be disclosed, making sustainability report a big step toward a comprehensive and standardized report.

Over the past decades, many jurisdictions worldwide have been actively pursuing sustainability reporting mandates (Christensen et al., 2021). A common objective of sustainability reporting regulations is to breed accountability and enable stakeholder groups to monitor corporate performance by enhancing transparency through disclosure (Haji et al., 2022). In 2003, France became the first country to include a sustainability reporting requirement for public companies, followed by several other European countries. The Non-Financial Reporting Directive (NFRD), introduced by the European Commission in 2014, marks a pivotal step in the EU's efforts to promote sustainability reporting and lays a foundation for future legislation. In 2022, the European Council approved the Corporate Sustainability Reporting Directive (CSRD), amending the NFRD and expanding the scope to a broader set of firms. The CSRD takes effect for fiscal years beginning on or after 1 January 2024 (European Commission, 2022). In addition, the International Sustainability Standards Board (ISSB) was established at COP26 in Glasgow in 2021, aiming to develop standards for a global baseline of sustainability disclosure.

However, the stated objectives, regulator type and enforcement level of sustainability reporting regulations vary considerably across countries. Unlike those in developed countries which focus more on transparency and capital market efficiency, the primary objectives of sustainability reporting regulations in developing economies are to promote favorable welfare outcomes, specifically related to addressing environmental and social problems (Haji et al., 2022). China has suffered from significant environmental

challenges for a long time due to its rapid industrialization, urbanization and economic growth. Air pollution, caused by heavy reliance on the coal energy industry, is known as one of the most severe problems in China. The Chinese government established several regulations to address environmental and social problems, with the Shanghai Stock Exchange pioneering mandatory sustainability reporting for publicly traded companies to promote favorable environmental and social outcomes. Given that the Stock exchanges in China are fully owned by the government, with functions including the supervision of listed companies with information disclosure obligations, the announcements on mandatory reporting published by the Stock Exchanges can be considered reporting regulations over the listed firms in China. In December 2008, the Shanghai Stock Exchange (SSE) issued the *Notice on Listed Companies' 2008 Annual Report* (SSE Notice), introducing mandatory sustainability reporting requirements for specific listed companies. The firms affected include (1) firms listed in the SSE Corporate Governance Index, (2) firms with shares listed overseas, and (3) firms in the financial sector.

Alongside the considerable attention paid to sustainability reporting, the demand for empirical studies on sustainability reporting has increased substantially. The upcoming disclosure regulations will extend firms' reporting obligations and require new knowledge about measurement, reporting, and assurance. Specifically, the reporting mandate necessitates a systematic update of current accounting systems to facilitate collecting and processing sustainability information, enabling internal control, and incorporating sustainability information into decision-making processes at the Board level. These developments will presumably incur intended or unintended consequences. Therefore, it is vital to investigate and understand the economic consequences of mandatory sustainability reporting, which, in turn, could be fundamental for future evidence-based policymaking (Leuz, 2018). Furthermore, it is important to examine how affected firms respond to the reporting mandate and investigate whether the sustainability reporting regulation triggers more sustainable business practices. By exploring firms' reporting practices, research can enhance our understanding of the effectiveness of current reporting requirements.

This dissertation consists of three essays studying the economic consequences of mandatory sustainability reporting and examining the effectiveness of such disclosure regulations. All three essays focus on the Chinese setting. China provides a unique and interesting empirical setting due to its significant role in the economy and its complex regulatory environment. The first essay studies the impact of mandatory sustainability reporting on firm risk. The second essay investigates the impact of mandatory sustainability reporting on firm profitability. Lastly, the third essay evaluates firms' sustainability reporting practices and explores the factors driving substantiveness of reporting.

In the first essay, Bonnie Buchanan, Hanna Silvola, and I investigate the relationship between the adoption of mandatory sustainability reporting and firm risk. We focus on the disclosure regulation enacted in China in 2008, which mandates three types of listed companies to disclose sustainability information. We analyze data for all A-share listed firms on the Shanghai Stock Exchange from 2004 to 2013. We employ a difference-in-

differences (DiD) approach to compare the changes in firm risk for firms subject to the mandatory sustainability reporting regulation (treatment firms) with changes for firms that are not subject to the mandate (control firms). Three measures of firm risk are utilized. We use the beta from the CAPM model as a proxy for the firm's systematic risk. We use the standard deviation of the residual from the CAPM model as a proxy for the firm's idiosyncratic risk. We use stock volatility as a proxy for the firm's total risk.

Our findings show that firms affected by mandatory sustainability reporting experience a decrease in total risk and systematic risk after the mandate. There is no evidence supporting a decrease in idiosyncratic risk following the mandate. Our results also suggest that the decrease in total risk and systematic risk is dependent on the level of legal enforcement in the regions/provinces where the firms are headquartered. Specifically, the decrease is primarily driven by firms headquartered in regions/provinces with strong legal enforcement. In addition, mandatory sustainability reporting does not necessarily induce firms to improve sustainable business practices by, for example, increasing R&D expenditures and employee salaries, implying that the intended purpose of the reporting mandate may not necessarily be accomplished.

In the second essay, I exploit the sustainability reporting mandate enacted by the Shanghai Stock Exchange at the end of 2008 and examine whether and how it affects firm profitability. I use a sample of A-share listed firms on the Shanghai Stock Exchange between 2004 and 2013. The primary sample consists of 7,224 firm-year observations, of which 2,069 are treatment firm-years and 5,155 are control firm-years. I use Return on Assets (ROA) and Return on Equity (ROE) as proxies for firm profitability and I also employ the Difference-in-differences (DiD) approach in this study.

My findings suggest that following the mandate, the firms affected by the mandatory sustainability reporting regulation experience a decrease in profitability. The findings are robust to alternative fixed effects and alternative samples, and the underlying assumption of the difference-in-differences estimate holds. Furthermore, in additional analysis, I examine the variations in profitability loss and find that the negative effect of mandatory sustainability reporting on profitability is more pronounced (1) for firms with a lower analyst following and less analyst coverage, (2) for firms with higher ownership concentration, and (3) for firms with financial statements audited by non-Big 4 firms. I also find firms subject to mandatory sustainability reporting experience an increase in compliance costs following the mandate.

In the third essay, Bonnie Buchanan, Hanna Silvola, and I examine the effectiveness of mandatory sustainability reporting and how firms respond to the mandatory reporting mandate by assessing firms' symbolic and substantive reporting practices. We use content analysis to systematically categorize qualitative and quantitative information into predetermined groups. Content analysis helps identify patterns in the presentation of information (Guthrie et al., 2004) and is widely used in accounting research. We also use OLS regression to perform additional analysis to investigate the drivers of reporting substantiveness.

Our findings show that in general, corporate sustainability reporting tends to be ceremonial rather than substantive even under the scope of mandatory reporting.

Institutional factors play key roles in shaping firms' sustainability reporting practices. Our findings suggest that firms with shares cross-listed on foreign stock exchanges and those operating in environmentally sensitive industries demonstrate a greater likelihood of generating substantive sustainability reports.

2 LITERATURE REVIEW

There is growing literature on sustainability reporting in accounting research. Researchers generally use voluntary disclosure settings to investigate the determinants of voluntary sustainability reporting (Höllerer, 2013; Thorne et al., 2014; Li et al., 2021), the association between sustainability reporting and corporate outcomes (Dhaliwal et al., 2011; Dhaliwal et al., 2012), and the real effects of voluntary sustainability reporting in the form of changes in corporate behaviors (Luo & Tang, 2023). Specifically, studies find association between sustainability reporting and firm size (Hahn & Kühnen, 2013), ownership (Cormier et al., 2005), corporate governance (Mallin et al., 2013; Bui et al., 2020,), and management characteristics (Cronqvist & Yu, 2017). Literature also shows that a high level of sustainability reporting is associated with a low cost of capital and fewer capital constraints (Dhaliwal et al., 2011) and accurate analyst forecast (Dhaliwal et al., 2012). Regarding the real effects, prior literature shows that voluntary sustainability reporting is associated with the reduction in high-profile misconduct (Christensen, 2016). These studies might suffer from self-selection bias and adverse causality due to the nature of voluntary reporting.

Mandatory reporting settings offer researchers the possibility to address such challenges by enabling quasi-experimental designs. There are two streams of literature on mandatory sustainability reporting: one focuses on industry-specific reporting regulation, see, for example, Christensen et al., (2017) and She (2022), the other focuses on the sustainability reporting regulations that apply to a broad range of firms, see, for example, Chen et al., (2018) and Fiechter et al. (2022).

2.1 Sustainability reporting and firm risk

Information on sustainability holds economic significance and is pertinent to the value of a business (Hu et al., 2018; Yoon et al., 2018). In general, managers possess a greater understanding of a firm's sustainability performance than investors and analysts, resulting in an information gap between management and crucial stakeholders. This information asymmetry exposes key stakeholders to the risk of incomplete information (Misra & Vishnani, 2012). To address this disparity, sustainability reporting emerges as a useful tool, reducing the information gap and providing investors with additional insights into the firm's competitiveness and expected future performance (Clarkson et al., 2013).

Empirically, sustainability reporting contributes to an improved information environment (Krueger et al., 2024) and enhanced precision in analyst forecasts (Cormier & Magnan, 2014), positioning it as a potential substitute for financial reporting and a means to improve a firm's information environment (Dhaliwal et al., 2014), thereby mitigating overall business risk. Mandatory reporting regulations mandate specific sustainability reporting criteria, explicitly outlining what and how information should be reported. This regulatory framework enhances stakeholder access to crucial information, reducing uncertainty and fostering transparency. The resulting reduction in information uncertainty regarding estimates of future prospects contributes to lowering the systematic risk associated with the firm (Misra & Vishnani, 2012). Furthermore,

Hasseldine et al. (2005) and Rezaee (2016) affirm that sustainability reporting has a positive impact on a firm's reputation, which is a valuable intangible asset. A reputable standing provides firms with advantageous resources such as brand loyalty and trust from key economic stakeholders, ultimately reducing inherent risks in business operations (Benlemlih et al., 2016).

2.2 Sustainability reporting and firm profitability

Sustainability reporting, as a new reporting practice, will presumably bring about costs because generating and disseminating information can incur significant expenses (Farvaque et al., 2011). As firms provide more detailed information, whether in terms of enhanced quality or increased quantity of disclosed data, the associated information production costs rise accordingly (Admati & Pfleiderer, 2000). This is exemplified in the case of sustainability reporting systems, where companies invest additional time and financial resources to establish frameworks facilitating measurement, assurance, management, and communication of performance. These costs encompass both direct expenses, such as in-house efforts and external consulting services, as well as indirect costs related to managerial attention which may otherwise be directed at alternative issues.

In addition, disclosure may have an impact on the recipients' behavior, causing substantive changes to the variables to be disclosed in the future (Fung et al., 2007). Consequently, information providers are motivated to take actions that result in more favorable disclosures (Downar et al., 2021). Sustainability disclosure provides external stakeholders with access to sustainability-related information, empowering them to respond to negative impacts. To protect themselves against reputational damage, firms may feel compelled to invest in more sustainable activities. Studies on the real effects of non-financial disclosure demonstrate that disclosure mandates prompt firms to alter their behavior. For example, Christensen et al. (2017) reveal that mandatory safety records lead to a decrease in mining-related injuries. Downar et al. (2021) illustrate that firms subject to a greenhouse gas emissions disclosure mandate in the UK reduce their emissions in response. Fiechter et al. (2022) explore the real effects of a CSR reporting mandate in the EU context and find that firms increase their CSR activities. She (2022) leverages a disclosure regulation related to supply chain transparency and discovers that affected firms subsequently enhance their supply chain due diligence. The motivation behind these actions is often driven by firms aiming to avoid public backlash, particularly in comparison with their industry peers (Christensen et al., 2021).

2.3 Sustainability reporting and institutional theory

Sustainability reporting serves as a vital tool for companies to convey information about their sustainability efforts to stakeholders and has traditionally evolved as a voluntary practice (De Villiers & Maroun, 2017). Despite some regulators pushing for the institutionalization and standardization of sustainability reporting, sustainability reporting operates within a relatively less rigid regulatory framework. Numerous companies have been identified as offering only generic sustainability information in their regulatory filings (Christensen et al., 2021). Some companies opt for symbolic disclosure, exaggerating their commitments and employing obfuscation techniques to

obscure potential negative impacts (Callery, 2022). Consequently, the proclaimed sustainability initiatives of these companies may not necessarily provide useful information and be manifested in tangible operational realities (Michelon, 2015; Böhling et al., 2019). This phenomenon aligns with what institutional literature often terms "decoupling," suggesting that companies superficially comply because of external pressures, adopting new structures without necessarily implementing corresponding practices (Meyer & Rowan, 1977; Meyer, 2010; Boxenbaum & Jonsson, 2017).

Neo-institutional theory is commonly used as a powerful explanation for organizational behavior (Tina Dacin et al., 2002; Kostova et al., 2008; Jamali, 2010; Meyer, 2010; Marquis and Qian, 2014). Institutions, defined as regulations, norms, and cognitive activities, exert isomorphic pressure over organizations. Nevertheless, organizations under pressure to adopt particular structures may opt to respond in a symbolic manner, bringing about a disjunction between the adoption and practical activities (Meyer, 2010).

Organizations tend to engage in decoupling from the environment when the embrace of institutionalized structures conflicts with internal efficiency requirements (Boxenbaum & Jonsson, 2017). Simultaneously, participating in ceremonial conformity allows them to sidestep the risk of losing legitimacy and provides a buffer against failure (Meyer & Rowan, 1997). Decoupling becomes prominent when the foundation of knowledge for a particular practice is ambiguous or when the institutional values themselves are unclear (Goodrick & Salancik, 1996).

3 SUMMARY OF THE ESSAYS

The primary objective of this dissertation is to investigate the impact of mandatory sustainability reporting on different corporate outcomes, as well as the effectiveness of such reporting mandates. This section presents a summary of the three essays included in this dissertation:

i. Does Mandatory Sustainability Reporting Reduce Firm Risk? Evidence from China

ii. Does Mandatory Sustainability Reporting Affect Firm Profitability? Evidence from China

iii. Walking the Talk: Symbolic and Substantive Sustainability Reporting

3.1 Essay 1: Does mandatory sustainability reporting reduce firm risk? Evidence from China

In this essay, Bonnie Buchanan, Hanna Silvola, and I investigate the relationship between the adoption of mandatory sustainability reporting and firm risk. We focus on the disclosure regulation enacted in China in 2008, which mandates three types of listed companies to disclose sustainability information. We analyze data for all A-share listed firms on the Shanghai Stock Exchange from 2004 to 2013 (five years before and after the reporting mandate). We further construct a treatment group consisting of firms affected by the disclosure regulation and a control group consisting of firms not being affected, resulting in 7,221 firm-year observations, of which 2,056 are treatment firm-years and 5,165 are control firm-years. Following prior literature (Jo & Na, 2012; Benlemlih et al., 2018; Alsaifi et al., 2021), we use the CAPM beta as the measure of a firm's systematic risk and the standard deviation of residuals from the CAPM model as the measure of a firm's idiosyncratic risk. Total risk, as the combination of systematic risk and idiosyncratic risk, is measured by stock volatility (Zeng et al., 2020; Glück et al., 2021).

Our findings show that firms affected by mandatory sustainability reporting experience a decrease in total risk and systematic risk after the mandate. There is no evidence supporting a decrease in idiosyncratic risk following the mandate. Additional analysis suggests that the decrease in total risk and systematic risk is dependent on the level of legal enforcement in the regions/provinces where the firms are headquartered. Specifically, the decrease is primarily driven by firms headquartered in regions/provinces with strong legal enforcement. In addition, mandatory sustainability reporting does not necessarily induce firms to improve sustainable business practices by, for example, increasing R&D expenditures and employee salaries, implying that the intended purpose of the reporting mandate may not necessarily be accomplished. Taken together, our findings suggest that mandatory sustainability reporting improves the market information environment but does not necessarily shift firms toward a more sustainable business model.

3.2 Essay 2: Does mandatory sustainability reporting affect firm profitability? Evidence from China

In this essay, I exploit the sustainability reporting mandate enacted by the Shanghai Stock Exchange at the end of 2008 and examine whether and how it affects firm profitability. I use a sample of A-share listed firms on the Shanghai Stock Exchange between 2004 and 2013. The primary sample consists of 7,224 firm-year observations, of which 2,069 are treatment firm-years and 5,155 are control firm-years.

I apply a difference-in-differences approach, which is commonly used in studies that explore the effects of specific policies, to compare the change over time in firm profitability for the treatment group with the change over time for the control group. In this study, return on assets (ROA) and return on equity (ROE) are used as proxies for firm profitability.

My findings suggest that following the mandate, the firms affected by the mandatory sustainability reporting regulation experience a decrease in profitability. The findings are robust to alternative fixed effects and alternative samples, and the underlying assumption of the difference-in-differences estimate holds. Furthermore, in additional analysis, I examine the variations in profitability loss and find that the negative effect of mandatory sustainability reporting on profitability is more pronounced (1) for firms with a lower analyst following and less analyst coverage, (2) for firms with higher ownership concentration, and (3) for firms with financial statements audited by non-Big 4 firms. I also find firms subject to mandatory sustainability reporting experience an increase in compliance costs following the mandate.

3.3 Essay 3: Walking the talk: symbolic and substantive sustainability reporting

In this study, Bonnie Buchanan, Hanna Silvola, and I examine the effectiveness of the mandatory sustainability reporting enacted by the Shanghai Stock Exchange. Our fundamental objective is to explore and understand how listed firms affected by the mandatory sustainability reporting regulation respond to such reporting mandate by assessing firms' symbolic and substantive reporting practices. Symbolic reporting practice is referred to as ceremonial conformity, while substantive reporting practice is referred to as presenting realities. The Shanghai Stock Exchange imposed mandatory sustainability reporting through coercive isomorphism with the purpose of shifting firms toward more sustainable business activities. Still, the firms affected by the regulation do not necessarily take real action, and this is reflected in their reporting practices as well.

In this study, we use neo-institutional theory to understand and explain the disjunction between the adaptation of formal structures and practical activities that are undertaken (Meyer & Rowan, 1977; Zucker, 1987; Marquis & Qian, 2014). We also explore the factors that explain variations in sustainability reporting substantiveness. Our sample consists of 100 firms listed on the Shanghai Stock Exchange Social Responsibility Index during the year 2019. We hand-collect data from the 100 sample firms' annual reports and sustainability reports for the year 2019 and apply content analysis developed by MISUM (2019) to measure firms' symbolic reporting ("talk" score) and substantive reporting

("walk" score). These factors may affect the variations in sustainability reporting substantiveness, including cross-listing (Coffee, 1998; Stulz, 1999; Tang & Li, 2009), governmental environmental monitoring (Marquis & Qian, 2014), and regional institutional development (Liu & Anbumozhi, 2009).

Our findings show that in general, the firms affected by mandatory sustainability reporting tend to engage in symbolic reporting, emphasizing their commitments to sustainability without providing a fair amount of robust evidence on their working realities. Institutional factors are considered vital in shaping firms' sustainability reporting practices. In particular, we find that firms with shares cross-listed on foreign stock exchanges and those operating in environmentally sensitive industries demonstrate a greater likelihood of generating substantive sustainability reports. Collectively, despite the existing reporting requirements, the overall level of reporting remained relatively low, suggesting that a stronger level of institutional supervision is needed for the effective implementation of disclosure regulations.

Table 1 provides the summary of three essays included in the dissertation.

Table 1 Summary of the essays comprising the dissertation

Essay	Manuscript title	Authors	Research content	Findings
1	Does mandatory sustainability reporting reduce firm risk? Evidence from China	Qinglan Huang Bonnie Buchanan Hanna Silvola	The first essay studies the impact of mandatory sustainability reporting on firm risk.	Firms affected by mandatory sustainability reporting experience a decrease in total risk and systematic risk after the mandate. However, no evidence is found that they also experience a decrease in idiosyncratic risk following the mandate. The decrease is primarily driven by firms headquartered in regions/provinces with strong legal enforcement. In addition, mandatory sustainability reporting does not necessarily induce firms to improve sustainable business practices in terms of increasing R&D expenditure and employee salaries.
2	Does mandatory sustainability reporting affect firm profitability? Evidence from China	Qinglan Huang	The second essay investigates the impact of mandatory sustainability reporting on firm profitability.	Firms affected by mandatory sustainability reporting on average experience a decrease in firm profitability subsequent to the mandate. The negative effect of mandatory sustainability reporting on profitability is more pronounced for firms with a lower analyst following and less analyst coverage, for firms with higher ownership concentration, and for firms with financial statements audited by non-Big 4 firms. Furthermore, the decrease in profitability loss primarily arises from the substantial increase in compliance costs pertaining to the preparation and dissemination of sustainability information.
3	Walking the talk: Symbolic and substantive sustainability reporting	Qinglan Huang Bonnie Buchanan Hanna Silvola	The third essay evaluates firms' sustainability reporting practices and explores the factors driving reporting substantiveness.	The firms affected by mandatory sustainability reporting tend to engage in symbolic reporting, emphasizing their commitments to sustainability without providing a fair amount of robust evidence on their working realities. Firms with shares cross-listed on foreign stock exchanges and those operating in environmentally sensitive industries demonstrate a greater likelihood of generating substantive sustainability reports.

4 CONTRIBUTIONS

In essay 1, Bonnie Buchanan, Hanna Silvola, and I examine the impact of mandatory sustainability reporting on firm risks. Our paper makes several contributions. First, our findings have important implications for the understanding of the economic consequences of mandatory sustainability reporting from the perspective of the capital markets. Second, we focus on firm risk and sustainability reporting in a unique research context, thus adding to the literature on disclosure-risk relation (Jo & Na, 2012; Benlemlih et al., 2018; Zeng et al., 2019; Alsaifi et al., 2021). Furthermore, our paper also extends the literature on the real effects of non-financial disclosure, which has received less attention compared with financial reporting (Luez & Wysocki, 2016). Our findings suggest that the reporting mandate does not necessarily induce firms to embrace more socially responsible practices, such as raising employees' salaries. Finally, our paper offers novel insights for policymakers, which can be considered a solid basis for evidence-based policymaking.

In essay 2, I explore the effect of mandatory sustainability reporting on firm profitability. My paper contributes to the literature on the economic implications of corporate disclosure. While many studies focus on the consequences of adopting new accounting standards, there is a recent surge of interest in exploiting related regulations on non-financial disclosure. My study is related to Chen et al. (2018), which focuses on the same research setting and finds that firms subject to sustainability reporting mandate experience a subsequent decrease in profitability but an improvement in their environmental outputs. However, Chen et al. (2018) lack control for different stock exchanges, as the two stock exchanges demand different disclosure content. This may raise concern that the impact they observe may not be driven solely by the reporting mandate but also by the required disclosure quality. To address this issue, my focus narrows down to one stock exchange to mitigate the concerns regarding varying disclosure requirements. I expand Chen et al. (2018) by showing that the negative effect of the reporting mandate on profitability is more pronounced for firms with low public visibility, firms with high ownership concentration, and firms with financial reports audited by non-Big 4 firms. Finally, this paper also documents evidence to suggest that mandatory sustainability reporting may lead to increased compliance costs related to preparing and disseminating new information.

In essay 3, Bonnie Buchanan, Hanna Silvola, and I evaluate firms' sustainability reporting practices and investigate the institutional factors driving reporting substantiveness. This study contributes to the debate on the effectiveness of mandatory sustainability reporting regulation in the Chinese context. Our findings show that, even in the mandatory reporting setting, firms generate more symbolic sustainability reporting, lacking solid evidence on their performance. Reporting substantiveness depends on whether firms are cross-listed overseas or fall under governmental environmental monitoring. This paper theoretically extends to the realm of neo-institutional theory within the context of sustainability reporting. Our findings support the arguments in decoupling studies (Meyer & Rowan, 1977; Pressman & Wildavsky, 1984), suggesting that firms tend to decouple practices from formal policies, resulting in

misalignment. Our results suggest that the reporting mandate itself does not necessarily lead to increased substantive disclosure. Additional supervision and stronger enforcement play a vital role in the process.

My dissertation, as a whole, provides a comprehensive understanding of sustainability reporting in China based on detailed examinations of a specific reporting regulation, i.e., the SSE Notice. The main objective of introducing such reporting regulation is to improve firms' environmental performance and ultimately contribute to the national long-term sustainable development. Accordingly, the intended consequence of this sustainability reporting regulation is a change of firms' behaviors towards more socially responsible activities. However, unintended consequences, whether positive or negative, could also take place after the introduction of this reporting regulation.

Our findings collectively suggest that the sustainability reporting regulation (SSE Notice), on the one hand, provides capital market participants with sustainability-related information not disclosed before, improves the information environment and provides risk-decreasing benefits. However, on the firm's side, this sustainability reporting mandate possibly increases costs, leading to a decrease in firm profitability. On the other hand, mandatory sustainability reporting does not necessarily drive organizational change towards more sustainable investments and business operations. Firms also seem to underperform in their reporting practices with the lack of substantive evidence in the reporting content. Overall, this dissertation points out that SSE Notice may fail to achieve the stated purpose, which is to promote desired environmental and social outcomes, but brings about some other unintended consequences to the firms and capital markets regardless of good or bad. These insights should contribute to the further evolution of China's sustainability reporting regulation in terms of the design of reporting regulation, the implementation of reporting regulation and the effectiveness of reporting regulation. This dissertation also calls for future research on upcoming regulatory changes in the domain of sustainability reporting.

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PART B: THE ESSAYS

LIST OF ESSAYS

ESSAY 1

Huang, Q., Buchanan, B., & Silvola, H. (2024). Does Mandatory Sustainability Reporting Reduce Firm Risk? Evidence from China.

ESSAY 2

Huang Q. (2024). Does Mandatory Sustainability Reporting Affect Firm Profitability? Evidence from China.

ESSAY 3

Huang, Q., Buchanan, B., & Silvola, H. (2024). Walking the Talk: Symbolic and Substantive Sustainability Reporting.

QINGLAN HUANG

Exploring Mandatory Sustainability Reporting in China: Economic Implications and Regulatory Effectiveness

Sustainability reporting refers to the measurement and communication of organizational environmental and social impacts and corporate governance. Over the past decades, many jurisdictions worldwide have been actively pursuing sustainability reporting mandates. Alongside the considerable attention paid to sustainability reporting, the demand for empirical studies on sustainability reporting has increased substantially. The upcoming disclosure regulations will extend firms' reporting obligations and require new knowledge about measurement, reporting, and assurance. Specifically, the reporting mandate necessitates a systematic update of current accounting systems to facilitate collecting and processing sustainability information, enabling internal control, and incorporating sustainability information into decision-making processes at the Board level. These developments will presumably incur intended or unintended consequences. Therefore, it is vital to investigate and understand the economic consequences of mandatory sustainability reporting, which, in turn, could be fundamental for future evidence-based policymaking.

The first essay in this dissertation shows that firms affected by mandatory sustainability reporting experience a decrease in total risk and systematic risk after the mandate. There is no evidence supporting a decrease in idiosyncratic risk following the mandate. The decrease in total risk and systematic risk is more pronounced for firms headquartered in regions/provinces with strong legal enforcement. In addition, mandatory sustainability reporting does not necessarily induce firms to improve sustainable business practices by, for example, increasing R&D expenditures and employee salaries, implying that the intended purpose of the reporting mandate may not necessarily be accomplished.

The second essay suggests that following the mandate, the firms affected by mandatory sustainability reporting regulation experience a decrease in profitability. This impact is more pronounced (1) for firms with a lower analyst following and less analyst coverage, (2) for firms with higher ownership concentration, and (3) for firms with financial statements audited by non-Big 4 firms. This essay also shows that firms subject to mandatory sustainability reporting experience an increase in compliance cost following the mandate.

Using content analysis, the third essay shows that corporate sustainability reporting tends to be ceremonial rather than substantive even under the scope of mandatory reporting. Institutional factors play key roles in shaping firms' sustainability reporting practices. Specifically, firms with shares cross-listed on foreign stock exchanges and those operating in environmentally sensitive industries demonstrate a greater likelihood of generating substantive sustainability reports. In summary, all three essays in this dissertation provide new insights into the impact of mandatory sustainability reporting.

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