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ESSAYS ON

ECONOMIC AND BEHAVIORAL CONSEQUENCES OF CSR REPORTING REGULATIONS

By

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DECLARATION

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

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Signature

Date: 03 July 2020

DEDICATION

I dedicate this dissertation to my Mom and Dad for their unconditional love.

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ABSTRACT

In recent years, an increasing number of countries have passed corporate social responsibility (CSR) reporting regulations for all or a subset of listed firms. An important feature of the CSR reporting regulations worldwide is that the regulations are relatively soft in the sense that most countries pass disclosure regulations that contain 'comply-or-explain' provisions. This dissertation contains three distinct studies that collectively examine economic and behavioral consequences of CSR reporting regulations. Study One surveys a large empirical evidence in accounting, finance, economics, law and management to evaluate the impact of CSR reporting regulations on (i) reporting quality, (ii) capital-markets and (iii) firm behavior. The survey indicates that CSR reporting regulations generate significant costs for affected firms around legislative events leading up to the CSR regulations. The survey also indicates that the CSR reporting regulations cause significant changes in firm behavior, and lead to improved social and environmental performance of affected firms. However, reporting and disclosure quality remain low. Based on this, Study Two experimentally investigates how comply-or-explain disclosure regulations affect managers' disclosure recommendations of a negative event affecting the firm's underlying economics. Results reveal that managers are more likely to make disclosure of a negative event in a comply-or-explain regulatory system relative to a voluntary regime. In addition, the impact of comply-or-explain regulation on managers' disclosure judgements is larger when the firm's prior disclosure policy is unknown than when it is known to be biased toward no disclosure. Finally, Study Three reports the results of an experiment examining investors' reactions to the incorporation of CSR performance measures in regulated financial reports relative to reporting CSR measures in standalone CSR reports. Results show that reporting CSR measures in standalone CSR reports triggers stronger reactions from investors, such that the influence of CSR information on investors' firm value estimates are stronger when CSR information is reported in a separate report relative when integrated in a financial report. Further, more investors misclassified CSR information as assured when integrated in a financial report relative to when reported in a separate report. Consequently, misclassifying investors rated credibility of CSR information higher and derived higher firm value estimates compared to investors who correctly classify this information as non-assured. Overall, studies in this dissertation inform the international CSR reporting regulations and standard-setting process.

Keywords: Regulation; Disclosure; Sustainability; Corporate Social Responsibility (CSR); Integrated Reporting; Investors; Managers; Accountability

CHAPTER 1

INTRODUCTION

1.1 Background

In recent years, an increasing number of countries have mandated corporate social responsibility (CSR) reporting for all or a subset of public listed firms[1] (Christensen, Hail, and Leuz 2019; Ho 2017; Sarfaty 2013). Regulators in several countries have also introduced CSR reporting standards and frameworks as part of enhanced disclosure reforms. One important motivation of the CSR reporting regulations and standards is the understanding that increased transparency puts pressure on firms, and potentially constrains undesirable corporate behavior. The CSR reporting regulations are, however, relatively soft in the sense that most countries implement reporting regulations that contain "comply-or-explain" clauses (Ho 2017).

Early studies focus on capital-market reactions to CSR reporting regulations, and find that firm value of affected firms significantly declines around legislative events leading up to the CSR reporting regulations in several institutional settings (Chen, Hung, and Wang 2018; Grewal, Riedl, and Serafeim 2019; Manchiraju and Rajgopal 2017). A separate line of research documents real effects of the CSR reporting regulations (Dharmapala and Khanna 2018; Fiechter, Hitz, and Lehmann 2019), consistent with the reporting regulations generating changes in firm behavior such as reductions in carbon emissions and workplace fatalities (Chen, Hung, and Wang 2018; Downar et al. 2019;

[1] The CSR reporting regulations require disclosure of various CSR and sustainability topics including employee safety, social performance, greenhouse gas emissions, human right abuses, product material sourcing, and extraction payment to foreign governments, climate change disclosures among other issues.

Gramlich and Huang 2017). However, evidence on the impact of CSR reporting regulations and frameworks on reporting quality is still scarce.

This dissertation expands research on CSR and sustainability reporting by examining the behavioral implications of CSR reporting regulations on managers' and investors' judgements. Prior literature has largely focused on the implications of CSR reporting in *voluntary* settings. The next section provides an overview of the studies in this dissertation.

1.2 Studies in the Dissertation

This dissertation contains three distinct studies that collectively examine economic and behavioral consequences of CSR reporting regulations. This chapter introduces the studies in this dissertation and briefly describes how the studies fit together and collectively contribute to important accounting and public policy issues.

Study One surveys a growing empirical research across five disciplines to evaluate economic and behavioral consequences of CSR reporting regulations. Specifically, Study One focuses on the impact of CSR reporting regulations on (1) reporting quality (2) capital-markets and (3) firm behavior. Study One also describes major developments leading up to the CSR reporting regulations in major institutional settings.

Study One finds that the stated objectives and enforcement level of CSR reporting regulations vary systematically across countries. Empirical studies show that the regulations generate significant costs for affected firms around legislative events leading up to the CSR reporting regulations. Growing empirical evidence also supports real effects following the regulations, specifically changes in firm behavior which give rise to social externalities. Given the worldwide move to CSR reporting regulations, conclusions in

Study One provide a broader set of important considerations for cost-benefit analyses of the different types of CSR reporting regulations.

An important finding in Study One is that reporting quality continues to be low after the CSR reporting regulations have been implemented in various institutional settings. In addition, most countries pass CSR reporting regulations that contain 'comply-or-explain' clauses. Comply-or-explain disclosure regulations allow firms to forego compliance with disclosure requirements provided that they explain reasons of non-compliance.

A natural question that arises is: How does comply-or-explain disclosure regulation affect managers' disclosure recommendations? Study Two of this dissertation examines this question using an experiment with experienced corporate managers. Drawing on motivated reasoning theory with insights from reason writing literature in psychology and legal research, Study Two predicts and finds that comply-or-explain disclosure regulation constrains the delay of bad news CSR disclosures. Specifically, managers are more likely to make disclosure of a negative event affecting the firm's underlying economics in a comply-or-explain regulatory system relative to a voluntary regime. In addition, the results reveal that the effect of a comply-or-explain regulation on managerial disclosure judgement is larger when the firm's prior disclosure policy is unknown than when it is known to be biased toward no disclosure. Mediation analyses further indicate that comply-or-explain disclosure regulation increases managers' perceived accountability which in turn drives their disclosure recommendations. Study Two contributes to the comply-or-explain literature, research on CSR reporting, and the broader disclosure literature. A detailed discussion of the contributions of Study Two is provided in Chapter 3.

Another finding in Study One is that the international CSR reporting regulations give rise to alternative CSR reporting frameworks across countries. For example, South Africa and the UK mandate integrated reporting, while other countries such as China and

Singapore require the publication of standalone CSR reports. The US Securities and Exchange Commission (SEC) seeks public feedback for several CSR reporting policy questions including "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC 2016, p. 214). The final and third study of this dissertation explores this question using an experiment with investors.

Specifically, Study Three examines how the integration of CSR performance measures in regulated financial reports, relative to reporting CSR measures in standalone separate reports, affects investors' firm value estimates. Guided by theories in cognitive psychology such as theory of 'category construction', results of Study Three show that CSR information has a greater impact on investors' firm value estimates when this form of information is reported in a separate report than when integrated in a financial report. Additional analyses indicate that integrating CSR measures in financial reports causes investors to misclassify non-assured CSR information as assured, consistent with category construction theory that categories evoke people to treat items of the same category as equivalent. As a result, misclassifying investors rated credibility of CSR disclosure higher and arrived at higher firm value estimates relative to investors who correctly classified CSR information as non-assured. Collectively, the findings of Study Three highlight important caveats of integrated reporting, and should be informative to global regulators such as the SEC who are presently considering alternative CSR reporting frameworks. The implications and contributions of Study Three are discussed in more detail in Chapter 4.

Taken together, this dissertation shows that CSR reporting regulations are not homogenous across countries, with some countries implementing comply-or-explain reporting regulations while other countries introduce more stringent mandatory reporting requirements. The CSR reporting regulations also give rise to alternative CSR reporting frameworks. Experimental results show that comply-or-explain regulation causes

managers to make disclosure of a negative CSR event affecting the firm's underlying economics, consistent with reason writing theory. However, CSR disclosure has a greater impact on investors' judgements when reported in a separate report relative to when integrated in a financial report.

1.3 Contributions

This section introduces the grand contributions of this dissertation as follows. First, Study One describes CSR reporting regulations worldwide, and finds that the objectives of CSR reporting regulations vary systematically across countries or regimes. For example, the CSR reporting regulations in more advanced countries such as the EU and UK focus on "reporting outcomes" such as comparability and transparency of disclosure reports whereas CSR reporting regulations in developing economies such as China, India and South Africa primarily focus on "welfare outcomes", specifically poverty alleviation and environmental preservation. Since the regulatory objectives vary across countries, what constitutes "intended" *versus* "unintended" consequences varies as well. Specifically, capital-market effects of CSR reporting regulations appear to be of first-order (second-order) importance in developed (developing) economies, whereas real effects in the form of social externalities seem to be of first-order (second-order) importance in developing (developed) countries. In sum, Study One emphasizes that (i) institutional details are crucial when considering consequences of CSR reporting regulations and (ii) exploiting these details allows for useful "narrow-sample" evidence (Christensen 2019) – two insights that inform research on CSR reporting regulations.

Second, Study Two contributes to the accounting literature and existing policy questions by considering how comply-or-explain disclosure regulation affects managers' evaluations of new disclosure matters. Comply-or-explain regulation, previously used as a

corporate governance mechanism, is increasingly presented as an alternative regulation to voluntary or line-item disclosure requirements worldwide. An important feature of the comply-or-explain regulatory system is that firms can forego disclosure but must provide an explanation if disclosure is not provided. Consistent with reason writing theory, Study Two shows that managers are more likely to recommend disclosure of a negative event in a comply-or-explain regulatory system than in a voluntary regime. As predicted by motivated reasoning and accountability theories, however, the effect of comply-or-explain regulation on managers' disclosure recommendations is larger when the firm's prior disclosure policy is unknown than when it is known to be biased toward less disclosure. Study Two provides initial evidence on how and when comply-or-explain regulation affects managers' disclosure recommendations. An important contribution of Study Two is that it adds to the voluntary *versus* mandatory disclosure regulatory dichotomy that has been the focus of prior accounting research.

Finally, Study Three informs the international CSR reporting regulations by highlighting potential costs of integrating CSR measures in regulated and audited financial reports. Specifically, Study Three shows that integrating CSR measures in financial reports causes investors to misclassify non-assured CSR measures as assured, consequently affecting investors' perceived disclosure credibility and firm value estimates. This finding has implications for global regulators considering alternative CSR reporting frameworks, and especially responds to the SEC's question of "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC 2016, p. 214).

1.4 Dissertation Structure

The remainder of the dissertation proceeds as follows. Chapter 2 presents the first study of this dissertation and surveys a large empirical evidence across five disciplines. Chapter 3 reports the results of an experiment with corporate managers examining the impact of comply-or-explain disclosure regulations on managers' disclosure judgements. Chapter 4 presents the final and third study of this dissertation investigating how integrating CSR performance measures in regulated financial reports affects investors' firm value estimates. Chapter 5 concludes the dissertation and provides a summary of the main research findings as well as theoretical, policy and practical implications of the research findings. Chapter 5 also highlights several limitations of the studies in this dissertation which raise opportunities for future research.

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CHAPTER TWO – STUDY ONE

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Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
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By signing the Statement of Authorship, each author certifies that:

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ii. permission is granted for the candidate in include the publication in the thesis; and
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Consequences of Corporate Social Responsibility (CSR) Reporting Regulations: A Survey

Abstract

In recent years, a growing number of countries have mandated Corporate Social Responsibility (CSR) reporting for all or a subset of listed firms. We survey a large empirical evidence in accounting, finance, economics, law and management to evaluate the impact of CSR reporting regulations on (1) reporting quality (2) capital-markets and (3) firm behavior. We also describe major developments leading up to the CSR reporting regulations in major institutional settings. We find considerable heterogeneity in the stated objectives and enforcement level of the regulations across countries. Empirical studies concentrate on capital-market reactions and show the regulations generate significant costs for affected firms around CSR legislative events. However, affected firms experience positive valuation outcomes over time via reductions in information asymmetry. There is limited evidence supporting improvements in reporting quality after the regulations. Growing empirical evidence supports real effects, specifically social externalities of CSR reporting regulations. Our survey presents a broader set of important considerations for cost-benefit analyses of the international CSR reporting regulations. We conclude with a number of future research suggestions.

Keywords: CSR; Reporting Regulation; Reporting Quality; Economic Consequences; Real Effects; Welfare Implications

2.1 Introduction

Prior research provides evidence that reporting and disclosure regulations have important economic consequences (e.g., Bushee and Leuz 2005; Dhaliwal 1979; Lee, Strong, and Zhu 2014; Lo 2003; Zhang 2007). However, the main focus of prior research has been the economics of *financial* reporting regulations (Leuz and Wysocki 2016) or financial regulation in general (Coates 2014; Cochrane 2014). In this study, we survey growing empirical studies across five related disciplines that examine economic and non-economic consequences of *non-financial* reporting regulations, specifically corporate social responsibility (CSR) reporting regulations. At the outset, we emphasize that the literature we survey in this study examines consequences of a broad CSR reporting regulations that are imposed on publicly listed firms, as opposed to prior CSR literature which focuses on voluntary CSR and/or a more targeted, industry-specific environmental reporting regulations[2].

The CSR reporting regulations have been implemented in a growing number of jurisdictions (Ho 2017; Sarfaty 2013), and coincide with current debates on whether disclosure of a wide-range of CSR matters should be mandated (Berger-Walliser and Scott 2018; de Villiers and van Staden 2011; Ho 2018). These regulations have been implemented in major economies including the European Union (EU), the United Kingdom (UK), China, India and many other developing countries[3]. In the United States (US), as discussed more detail in the paper, the Securities and Exchange Commission (SEC) does not mandate CSR reporting on a standalone basis, but instead incorporates this form of

[2] Throughout the paper, we use "CSR reporting" for consistency purposes. However, the literature we survey uses various terms commonly used in practice including sustainability reporting, environmental, social and governance (ESG) reporting, conflict mineral reporting, integrated reporting or more generally non-financial reporting (Huang and Watson 2015).

[3] A number of developing countries such as South Africa, Malaysia, Brazil, Indonesia and many others have also mandated CSR disclosure for all or a subset of public listed firms.

reporting into securities regulations and requires disclosure of "material" matters including CSR issues (SEC 2010, 2016). However, specific sections of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (hereafter, Dodd-Frank Act) contain disclosure provisions that mandate CSR disclosures for certain US firms and industries.

We begin our survey by describing major developments leading up to the CSR reporting regulations and implementation in major institutional settings. Specifically, we describe the stated objectives and enforcement level of the CSR reporting regulations across different jurisdictions. We then review and assess empirical studies in accounting, finance, economics, law and management that examine broad research questions about the effects of CSR reporting regulations in various institutional settings[4]. Following prior studies (Donaldson and Preston 1995; Andrew and Baker 2020), we classify the empirical studies into three broad categories: Studies focusing on (1) reporting and disclosure quality effects (2) capital-market effects and (3) real effects of the CSR reporting regulations[5]. The overarching objective of this study is to (i) establish a common ground for researchers interested in studying consequences of CSR reporting regulations (ii) synthesize empirical evidence on the effects of CSR reporting regulations on various outcomes, and (iii) identify directions for future research. Throughout the paper, we draw on prior studies that examine consequences of reporting and disclosure regulations in the past with a specific focus on Regulation Fair Disclosure (Regulation FD) studies, the International Financial Reporting Standards (IFRS) adoption literature, and industry specific environmental reporting regulations. We refer to these literatures to highlight similar research-design challenges common in regulatory studies.

[4] Given studies that examine consequences of CSR reporting regulations are still at an early stage, we follow prior studies and include in our review both published as well as working papers (see e.g., Brüggemann, Hitz, and Sellhorn 2013; Soderstrom and Sun 2007).

[5] Following Leuz and Wysocki (2016, p. 530), we define real effects of reporting regulation as situations in which affected firms change their behavior in the real economy as a result of the reporting regulation.

Five important insights emerge from our survey. *First*, we find that there is substantial heterogeneity in the CSR reporting regulations across jurisdictions, both in terms of stated objectives as well as reporting models. Specifically, the stated objectives of CSR reporting regulations reflect the socio-economic development and goals of the implementing country. For example, CSR reporting regulations in more advanced economies such as the EU and UK focus on "reporting outcomes" such as comparability and transparency of disclosure reports whereas CSR reporting regulations in emerging economies such as China, India and South Africa primarily focus on "welfare outcomes", specifically poverty alleviation and environmental preservation. There is also considerable variation in reporting enforcement level and CSR reporting models across countries. Specifically, we identify two major forms of CSR reporting models across jurisdictions (1) "comply-or-explain" and (2) mandatory regimes[6]. We posit that this heterogeneity in CSR reporting regulations across countries is an important consideration for the development of research questions and the interpretation of empirical results, particularly generalizability of empirical results across institutional settings.

Second, we find that empirical studies concentrate on capital-market effects of CSR reporting regulations. Event studies almost unanimously find that firm value of affected firms significantly declines around legislative events leading up to the CSR regulations in various institutional settings[7] (Birkey et al. 2018; Chen, Hung, and Wang 2018; Grewal, Riedl, and Serafeim 2019; Hombach and Sellhorn 2019; Manchiraju and Rajgopal 2017),

[6] We distinguish between the "comply-or-explain" and "mandatory" CSR reporting regulations in that the latter does not provide affected firms the option to opt out disclosure, but rather requires them to provide mandatory disclosures on their CSR activities either in the form of issuing standalone CSR reports or integrating in financial reports. We note that some countries such as the UK and South Africa adopt CSR disclosure regulations that contain both "comply-or-explain" and "mandatory" clauses.

[7] An important feature of the CSR reporting regulations is that most implementing countries impose the regulations on a subset of firms. This presents researchers an attractive quasi-natural experimental setting to examine capital-market effects, real changes in firm behavior and the associated societal benefits and costs of the reporting regulations.

consistent with capital-markets perceiving CSR regulations as bad news. However, affected firms experience positive valuation outcomes over time (Ioannou and Serafeim 2017; Jadiyappa, Iyer, and Jyothi 2019; Krüger 2015), consistent with increased CSR disclosure reducing information asymmetry (Hung, Shi, and Wang 2013; Krüger 2015). Empirical evidence on other economic outcomes such as liquidity (Barth et al. 2017; Kajueter, Kerkhoff, and Mauritz 2019), firm profitability (Bhagawan and Mukhopadhyay 2018; Chen, Hung, and Wang 2018; Mukherjee, Bird, and Duppati 2018), and cost of capital (Gong, Xu, and Gong 2018; Zhou, Simnett, and Green 2017) is inconclusive. Our review indicates that the capital-market outcomes from CSR reporting regulations are confined to a group of firms – and is mainly driven by firms who had not previously engaged in CSR activities (Grewal, Riedl, and Serafeim 2019).

Third, there is growing empirical evidence supporting real effects of CSR reporting regulations (Chen, Hung, and Wang 2018; Fiechter, Hitz, and Lehmann 2019; Gramlich and Huang 2017). For example, studies provide evidence showing that CSR reporting regulations are associated with (1) increases in CSR ratings and spending of affected firms (Dharmapala and Khanna 2018; Fiechter, Hitz, and Lehmann 2019), (2) decrease in emissions and pollution levels (Chen, Hung, and Wang 2018; Downar et al. 2019; Gramlich and Huang 2017), (3) better internal control decisions (Barth et al. 2017), and (4) decreases in employee injuries and fatalities (Chen, Hung, and Wang 2018; Christensen et al. 2017). However, the real effects of CSR regulations are not homogenous across firms or industries and, again, depend on various industry and firm-specific factors including affected firms' pre-regulation CSR reporting and performance records (Fiechter, Hitz, and Lehmann 2019; Grewal, Riedl, and Serafeim 2019).

Fourth, our review indicates that the empirical evidence is both consistent with the *intended* and *unintended* consequences of CSR reporting regulations. A number of studies

find that CSR reporting regulations impose substantial costs on firms but create societal benefits (Chen, Hung, and Wang 2018; Christensen et al. 2017; Tomar 2019), indicating a trade-off between profitability and social responsibility. Other studies also provide early evidence showing that the reporting regulations backfire and impose significant costs on vulnerable societies (e.g., Dharmapala and Khanna 2018; Emerson 2017; Parker, Foltz, and Elsea 2016; Parker and Vadheim 2017). Given these trade-offs, it remains an open empirical question whether CSR regulations generate net benefits or costs on society as a whole (Coates 2014).

Finally, studies find no significant improvements in reporting and disclosure quality after CSR reporting regulations. Specifically, early evidence suggests that firms continue to be selective of their CSR disclosures post CSR reporting regulations, with a continued use of boilerplate language in CSR reports (Chauvey et al. 2015; Haji 2013; Setia et al. 2015). Other studies also argue that CSR disclosures reflect symbolic rather than substantive response to CSR reporting regulations (Birkey et al. 2018; Schwartz 2016; Solomon and Maroun 2012). The latter observation that CSR disclosure is motivated by corporate legitimation strategies is consistent with the main conclusions in the voluntary CSR literature (for an early exception see e.g., Guthrie and Parker 1989). Further, effects of CSR reporting regulations on qualitative properties such as credibility, comparability and accessibility of CSR disclosure reports is unclear (Ackers 2017; Ioannou and Serafeim 2017). The lack of evidence supporting reporting quality improvements after the CSR reporting regulations does raise valid questions as to what is driving the positive economic outcomes observed in capital-market research. That is, potential capital-market benefits of

reporting regulations (e.g., reductions in information asymmetry) should supposedly stem from improvements in reporting and disclosure quality[8].

Our insights are important for the following reasons. *First*, several prior studies surveyed the vast and growing CSR literature (e.g., Erkens, Paugam, and Stolowy 2015; Friede, Busch, and Bassen 2015; Huang and Watson 2015; Margolis, Elfenbein, and Walsh 2009; Radhakrishnan, Tsang, and Liu 2018). However, these surveys focused on empirical studies that provide evidence based on a *voluntary* setting. In contrast, we focus on empirical studies that examine *mandatory* CSR reporting. Our study most closely relates to a concurrent paper by Christensen, Hail, and Leuz (2019) who survey the vast CSR reporting literature with a focus on the economic effects of CSR reporting standards in the United States. We complement their survey and focus on the potential consequences of CSR reporting regulations internationally. Further, we link the empirical findings in different institutional settings to the stated objectives of the specific CSR reporting regulation, and determine whether the empirical evidence is consistent or inconsistent with the stated objectives of CSR reporting regulations (for a similar approach see e.g., Brüggemann, Hitz, and Sellhorn 2013).

Second, extant literature on the economics of reporting and disclosure regulations largely focuses on more developed financial markets, primarily the US and continental Europe. In this study, we survey empirical evidence on the capital-market and real effects of reporting regulations in "nontraditional institutional settings" (Leuz and Wysocki 2016, p. 533). Because a key objective of CSR reporting regulations in developing countries is to

[8] This observation is similar to previous conclusions drawn from financial reporting and disclosure regulations. For example, see Coates and Srinivasan (2014) for a review of SOX literature, Koch, Lefanowicz, and Robinson (2013) surveys Regulation FD studies, and other papers review the IFRS adoption literature (e.g., Brüggemann, Hitz, and Sellhorn 2013; De George, Li, and Shivakumar 2016; Soderstrom and Sun 2007). In addition, Leuz and Wysocki (2016) surveys the broad literature on financial reporting regulations. The key conclusion is that empirical studies of reporting and disclosure regulations attribute a number of economic benefits to reporting regulations, but provide limited evidence that supports reporting quality improvements (e.g., comparability and transparency).

improve public welfare, we synthesize empirical evidence on the welfare implications of CSR regulations in settings where the reporting regulations are directly linked to welfare outcomes. Our survey also indicates that (i) institutional details are crucial when considering consequences of CSR reporting regulations and (ii) exploiting these details allows for useful "narrow-sample" evidence – two insights that inform early research on CSR reporting regulations.

Third, our survey of the mandatory CSR reporting literature complements and extends prior reviews that historically focused on the economics of *financial* reporting and disclosure regulations (Brüggemann, Hitz, and Sellhorn 2013; Healy and Palepu 2001; Leuz and Wysocki 2016). Importantly, we highlight the implications of mandated CSR reporting for the broader information environment, both within and across firms (Beyer et al. 2010). Although financial and CSR reporting share some important features, a key difference is that CSR disclosure audience and the uses of this information are much broader (Christensen, Hail, and Leuz 2019). Our review indicates that CSR reporting regulations generate important economic benefits for affected firms including positive valuation outcomes. Importantly, our review shows that the positive valuation outcomes for affected firms are mainly due to reductions in information asymmetry (i.e., capital-market channel) rather than improvements in operating performance (i.e., real effect channel) (Hung, Shi, and Wang 2013; Krüger 2015). We provide comprehensive review of the international empirical CSR reporting literature and synthesize important reporting, economic and behavioral implications of CSR reporting regulations[9].

Finally, we inform ongoing CSR reporting regulations around the world. Specifically, our survey provides a broader set of important considerations for cost-benefit

[9] Further, we suggest alternative interpretations of the documented findings and highlight research design-issues that have recently taken at centre stage in academic research, in particular issues of identification and drawing causal inferences (Coates and Srinivasan 2014; Glaeser and Guay 2017; Gow, Larcker, and Reiss 2016; Leuz 2018).

analyses of CSR reporting regulations. Our insights also inform ongoing CSR reporting standard setting and CSR reporting guidelines. Currently, a number of nonprofit organizations such as the International Integrated Reporting Council (IIRC) promote enhanced reporting and disclosure frameworks (IIRC 2013, 2017). Similarly, the Sustainability Accounting Standards Board (SASB) recently published a set of 77 codified industry-specific CSR standards in which investors and companies can use to identify and integrate financially-material CSR matters (SASB 2018). The main conclusions of our survey support these ongoing initiatives of CSR reporting frameworks and standard-setting, and should be informative to the IIRC and SASB campaigns. Specifically, our survey indicates that CSR reporting regulations alone may not increase reporting and disclosure quality, and that CSR standards and reporting guidelines are important instruments for improving reporting quality.

The rest of the paper proceeds as follows. Section 2 presents an overview and developments of CSR reporting regulations in major institutional settings. In Section 3, we briefly discuss theoretical background of reporting regulations regarding reporting quality, capital-market outcomes and real effects. Section 4 reviews studies that examine consequences of CSR reporting regulations. We focus on studies that examine (i) reporting quality (ii) capital-market reactions and (iii) real effects of CSR reporting regulations. In Section 5, we provide a number of future research directions and suggestions for researchers that are interested in studying consequences of CSR reporting regulations. Section 6 concludes the study.

2.2 CSR Reporting Regulations in Major Institutional Settings

Prior literature has often described CSR as voluntary actions by companies that are not required by law. For example, McWilliams and Siegel (2001, p. 117) define CSR as

"actions that appear to further some social good, beyond the interests of the firm and that is required by law". The CSR reporting regulations represent a setting in which CSR practices of a firm are no longer voluntary but are simply required by the law. In this setting, Berger-Walliser and Scott (2018) re-define CSR as those corporate actions, or processes that consider the impact of corporate actions on affected stakeholders, which are undertaken at least in part because of a recognized moral or ethical duty to society and stakeholders beyond shareholders.

A growing number of countries have passed CSR reporting and disclosure regulations in recent years (Ho 2017; Sarfaty 2013). Unlike the more targeted, industry-specific environmental reporting regulations in the past (e.g., Toxic Release Inventory), the recent CSR reporting regulations require public listed companies across various industries to file comprehensive disclosures covering environmental, social and governance matters. In this section, we describe major developments leading up to the CSR reporting regulations and implementation in a growing list of countries. We have undertaken a review of CSR reporting regulations in a number of jurisdictions and this is reported in Table 2.1 of Appendix A. However, we have restricted our discussion in the paper to major institutional settings and those leading this type of regulatory change[10]. Specifically, we focus on three aspects of the CSR reporting regulations: (1) stated objectives of the regulations (2) level of enforcement and type of reporting regulations and (3) assurance / audit requirements.

[10] For the purposes of this paper, we define 'major institutional settings' as those countries or jurisdictions with sizeable economy or population. We include South Africa as it is a leading country in the global movement of enhanced reporting reforms.

2.2.1 CSR Reporting Regulations in Developed Countries

The EU passed CSR disclosure Directive 2014/95 on April 2014, and became effective from 1st January 2017, or during calendar year[11] (EU-Directive 2014). European public listed firms are required to report on broad CSR matters including policies, risks and outcomes about environmental matters, social and employee aspects, respect for human rights, anticorruption issues, and diversity in their board of directors among other metrics[12]. Consistent with financial reporting objectives of the EU, the stated objective of the CSR Directive is to "increase the relevance, consistency and comparability of information disclosed by certain large undertakings and groups across the Union" (EU-Directive 2014, p. 4). Also consistent with the EU's capital-market objectives of reporting regulations, the CSR Directive is a "step towards reaching the milestone of having in place by 2020 market and policy incentives rewarding business investments in efficiency under the roadmap to a resource-efficient Europe" (EU-Directive 2014, p. 3).

As the EU adopted a disclosure 'Directive' rather than 'regulation', affected firms have considerable discretion and therefore disclosure requirement is effectively on a 'comply-or-explain' basis (Aureli, Magnaghi, and Salvatori 2019; Christensen, Hail, and Leuz 2019). The Directive does not also delineate consequences or penalties imposed on the affected companies for non-compliance. Interestingly, the Directive also requires auditors to state in their audit report whether their client firm provided the CSR disclosure statement. An EU commission has recently issued a non-mandatory reporting guideline to assist firms to transition into the new reporting requirements (EU-Commission 2017).

[11] The EU CSR Directive applies to large listed firms and "public-interest entities" with 500 or more employees, and with either more than EUR 20 million of total assets or more than EUR 40 million of sales. Public-interest entities are firms listed on EU stock exchanges, insurance companies, non-listed banks and companies designated by EU Member States as public-interest entities due to their size, activities or industry. Before the EU's CSR reporting directive, individual member states such as France, Spain and Denmark required public listed companies to provide CSR disclosures.

In the UK, new CSR disclosure regulations coded as the 'Strategic Report' under the Companies Act 2006 were approved in August 2013 which came into force on 1 October 2013 (Act-Companies 2013). The Strategic Report replaces a previous 'comply-or-explain' CSR disclosure regulation in the UK and requires large listed companies to prepare a Strategic Report for each financial year[13]. The Strategic Report must contain (1) a fair review of the company's business, and (2) a description of the principal risks and uncertainties facing the company. Specifically, affected companies must provide information on (1) environmental matters such as greenhouse gas emissions, (2) the company's employees and (3) social, community and human rights issues in their annual reports. Consistent with financial reporting objectives of the UK, the stated objective of the Strategic Report is to "inform members of the company and help them assess how the directors have performed their duty under section 172 (i.e., duty to promote the success of the company) (Act-Companies 2013, p. 22). Failure to comply with this act is an offence committed by every person who was registered as (i) a director of the company immediately before the end of the period for filing the report for the specific financial year, and (ii) failed to take all reasonable steps for securing compliance with that requirement. On conviction, a fine not exceeding the statutory maximum applies. Audit or assurance of CSR reports is not mandatory under the new disclosure requirements.

Parallel with the Strategic Report, the Modern Slavery Act (MSA) was separately passed in the UK in 2015, which imposes additional disclosure requirements on listed UK firms satisfying specific size threshold (MSA 2015). The MSA includes a Transparency in Supply Chains (TISC) clause which mandates firms that conduct businesses in the UK with a total global annual turnover of £36m additional reporting requirements. Specifically, the

[13] The directors of a company must prepare a strategic report for each financial year if the company is (i) a parent company, and (ii) the directors of the company prepare group accounts. The strategic report must be a consolidated "group strategic report" relating to the undertakings included in the consolidation. Small companies need not prepare a strategic report.

MSA requires affected companies to issue an annual slavery and human trafficking statement for each financial year. In this statement, affected firms must provide information on specific steps the firm has taken during the financial year to ensure that slavery and human trafficking is not taking place (i) in any of its supply chains, and (ii) in any part of its own business. Otherwise, affected firms must prepare a statement that the organization has taken no such steps (MSA 2015). The stated objective of the MSA disclosure regulation is to "make it absolutely transparent what action a business is or is not taking and will allow investors, consumers and the general public to decide who they should and should not do business with" (Home-Office 2015, p. 66). Assurance, however, is not required under the MSA disclosure requirements.

The Australian Securities Exchange (ASX) adopts a 'comply-or-explain' corporate governance and CSR reporting system (also known as the "if not, why not" approach) (ASX 2019). Specifically, Principle 7.4 of the Australian corporate governance code states that "a listed entity should disclose whether it has any material exposure to environmental or social risks and, if it does, how it manages or intends to manage those risks" (ASX 2019, p. 27). Listed firms can satisfy this requirement by simply issuing integrated reports or sustainability reports, although issuance of such reports is not mandatory. The ASX defines material exposure as the "real possibility that the risk in question could materially impact the listed entity's ability to create or preserve value for security holders over the short, medium or longer term" (ASX 2019, p. 27). However, the ASX does not provide specific reporting guidelines to firms, specifically regarding the identification of "material" risks. Assurance is also voluntary.

In the US, the SEC does not mandate CSR reporting on a standalone basis, but instead incorporates this form of reporting into securities laws and requires disclosure of

"material" matters including CSR issues[14] (SEC 2010). Nonetheless, the SEC acknowledges that there is a growing desire for greater disclosure of a variety of public policy and CSR matters, and states that these matters are of increasing significance to investors' voting and investment decisions (SEC 2016). Specifically, the SEC (2016, p. 213) sought public feedback for several questions regarding potential CSR reporting mandate including "If we were to adopt specific disclosure requirements involving sustainability or public policy issues, how could our rules elicit meaningful disclosure on such issues?".

Despite absence of a standalone CSR disclosure regulation, specific sections of the Dodd-Frank Act contain several clauses that mandate CSR disclosures for certain US listed firms. These sections are Section 1502, 1503 and 1504. Section 1502 requires publicly listed US firms to file a Conflict Minerals Report (CMR) and Specialized Disclosure Report (Form SD) with the SEC from 2014 and provide conflict mineral disclosures, specifically their use of tin, tungsten, tantalum and gold (3TGs) in their products and supply chain. Firms are required to determine and disclose if their products are sourced from conflict minerals originating from Democratic Republic of the Congo (DRC) or an adjoining country, collectively known as the Covered Countries[15]. The SEC requires an audit for firms that claim their products are free of conflict minerals from the DRC (Sankara, Lindberg, and Razaki 2015). Firms, however, have discretion to engage auditors for either an attestation engagement or a performance audit (Herda and Snyder 2013). The objective

[14] The SEC is concerned that adopting CSR disclosure requirements "may have the goal of altering corporate behavior, rather than producing information that is important to voting and investment decisions" (SEC 2016, p. 212). The concern here arises because the SEC does not have a congressional mandate to pursue altering corporate behavior.

[15] The Covered Countries as defined by the Dodd-Frank Act are: Democratic Republic of the Congo, Angola, Burundi, Central African Republic, Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda and Zambia.

of this disclosure regulation is to curb human rights violations in Central Africa by forcing US firms to disclose whether they are sourcing their products in an ethical manner.

Section 1503, on the other hand, requires SEC-registered mining firms to disclose their mine-safety performance records in regulated financial reports. Finally, Section 1504 required US extractive firms to provide extraction payment disclosures detailing payments to all foreign governments in which they operate. However, the US Congress repealed Section 1504 in 2017 (Hombach and Sellhorn 2019; Schneider, Michelon, and Paananen 2018).

2.2.2 CSR Reporting Regulations in Developing Countries

A growing number of developing economies have passed CSR reporting regulations. China has mandated CSR reporting for a subset of listed firms in December 2008, specifically firms listed on Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE). Affected firms are required to issue a separate standalone CSR report starting from fiscal year 2008. Specifically, affected firms are required to provide information on (1) protection of the interests of shareholders and creditors (2) protection of workers' rights (3) protection of suppliers, customers and consumers (4) environmental protection and sustainable development (5) public relations and social welfare services and (6) social responsibility problems and corrective action plans. Both exchanges explicitly state that firms will be delisted and publicly condemned if they fail to issue a separate CSR report. The aim of the CSR reporting regulation is consistent with the Chinese government's recent attempts to control increasing levels of environmental pollution and "building a harmonious society" (Chen, Hung, and Wang 2018). However, audit or assurance of CSR reports is not required under the CSR reporting regulation.

In South Africa, the Institute of Directors in South Africa (IoDSA) issued a series of corporate governance and disclosure reforms, known as King Reports in 1994 (King I), 2002 (King II), 2009 (King III) and 2016 (King IV). The King Reports strongly emphasize importance of CSR disclosures as part of national development goals. In particular, the IoDSA issued King III and mandated integrated reporting[16] for all firms listed on the Johannesburg Stock Exchange in 2009, effective from March 2010 on a "comply-or-explain" basis (IoDSA 2009). In 2016, the IoDSA upgraded the disclosure mandate from "comply-or-explain" to "comply-*and*-explain". The governance reforms, and in particular the implementation of integrated reporting in South Africa, reflect the social setting of South Africa and are part of larger government policies intended to tackle social and economic inequalities following apartheid in South Africa (De Villiers, Rinaldi, and Unerman 2014). Specifically, listed firms are required to file annual integrated reports detailing "how a company has, both positively and negatively, impacted on the economic life of the community in which it operated during the year under review; and how the company intends to enhance those positive aspects and eradicate or ameliorate the negative aspects in the year ahead" (IoDSA 2009, p. 44). The reporting and governance reforms are also expected to significantly enhance South Africa's reputation and competitiveness in global financial markets, as well as inflow of foreign direct investments. King III required "combined assurance"[17] as well as independent external assurance on CSR disclosures on a "comply-or-explain" basis (Ackers and Eccles 2015; IoDSA 2009). However, external

[16] The King Report on Governance for South Africa 2009 (King III) defines integrated reporting as "a holistic and integrated representation of the company's performance in terms of both its finance and its sustainability".

[17] Combined assurance also known as ''three lines of defense,'' is defined as "integrating and aligning assurance processes in a company to maximize risk and governance oversight and control efficiencies, and optimize overall assurance to the audit and risk committee, considering the company's risk appetite" (IoDSA 2009, p. 49). Combined assurance integrates assurance from management, internal and external auditors.

assurance of CSR disclosure requirement is subsequently relaxed in King IV issued in 2016 (Ackers 2017).

India has legislated a unique CSR regulation in August 2013 under the Companies Act on a 'comply-or-explain' basis. Unlike other countries, the CSR regulation in India requires firms that meet certain size or profitability thresholds to spend 2% of their average net income of the last three years on specified CSR causes (Companies-Act 2013). In addition, affected firms must publicly disclose an official CSR policy and report their CSR activities during the year in their annual reports[18]. Consistent with national goals to alleviate poverty, the Ministry of Corporate Affairs specified a number of CSR areas in which affected firms should direct their CSR spending on including education, health care, poverty eradication, environment, arts, gender equality, reducing inequalities among other areas (Dharmapala and Khanna 2018). Affected firms are not penalized for failing to spend on CSR activities. However, firms must *explain* in their annual reports reasons for failing to spend on CSR causes. Failure to *explain* shall result in monetary fine on the company and its officers, with default company officers potentially facing up to three years in prison. Audit or assurance on CSR spending or disclosures is not required.

A growing list of other countries have mandated CSR reporting for all or a subset of listed firms. These countries include Malaysia, Indonesia, South Korea, Brazil, Singapore, Hong Kong, and Japan. We summarize key developments and implementation of the international CSR reporting regulations in Table 2.1 of Appendix A.

[18] The CSR mandate in India also requires affected firms to make changes in board structure. Specifically, affected firms are required to form a CSR board committee consisting of three or more directors, of which at least one member must be an independent director.

2.2.3 Summary of CSR Reporting Regulations

We summarize a number of key observations from the international CSR reporting regulations. *First*, there is clear differences in the stated objectives of the reporting regulations across countries, largely due to differences in socio-economic development and national interests of implementing countries. The stated objectives of CSR reporting regulations in economically developed nations such as the EU and UK are consistent with financial reporting objectives (e.g., transparency and comparability) and capital-market outcomes (e.g., resource-efficient markets) (Brüggemann, Hitz, and Sellhorn 2013). In contrast, the primary objectives of CSR reporting regulations in developing economies such as China, India, South Africa and other similar economies focus on "welfare outcomes", specifically social and environmental outcomes such as poverty alleviation, environmental conservation, and human rights violations – consistent with the socio-economic development and national goals of these countries.

We posit that the heterogeneity in the stated objectives of CSR reporting regulations across countries is an important consideration for the generation of research questions and the interpretation of empirical results in specific institutional settings. Specifically, capital-market effects of CSR reporting regulations appear to be of first-order (second-order) importance in developed (developing) economies, whereas real effects in the form of social externalities seem to be of first-order (second-order) importance in developing (developed) countries. Further, the nature and considerable variations of CSR reporting regulations across countries "localizes" the empirical evidence to only the studied settings (Leuz 2018; Leuz and Wysocki 2016). However, we note that local evidence can sometimes be useful and applicable to other settings, especially if these settings share important institutional characteristics.

Second, we find two major types of CSR reporting regulations: (1) 'comply-or-explain' system and (2) mandatory regime, with most countries introducing comply-or-explain regulations[19]. Countries such as the UK and South Africa, however, adopt CSR regulations that contain both 'comply-or-explain' and mandatory clauses, thereby creating a 'hybrid' form of CSR reporting regulation. From our survey, it remains an open empirical question how alternative forms of CSR reporting regulations (i.e., comply-or-explain *versus* mandatory regimes) affect reporting quality, capital-markets and firm behavior[20].

Third, our observations suggest that enforcement of CSR reporting regulations is remarkably weak in most jurisdictions. An important finding in prior research investigating effects of reporting regulations, specifically the IFRS adoption literature, is that potential effects of reporting regulations are driven by concurrent changes in reporting enforcement (Christensen, Hail, and Leuz 2013; Daske et al. 2008). It is unclear how CSR reporting regulations would have significant reporting quality, capital-market and/or real effects without concurrent changes in the supporting infrastructure, especially considering the 'comply-or-explain' clauses in most countries and the broad range of CSR disclosure topics and audience.

Fourth, we observe that the CSR reporting regulations in most countries do not require independent external assurance on CSR disclosures. The EU-Directive (2014, p.

[19] It is less clear what is driving the widespread adoption of comply-or-explain disclosure regulations. However, it appears that the adoption of comply-or-explain regulations is motivated by an understanding that such regulatory systems remedy the one-size-fits-all concerns of mandatory disclosure regulations - particularly for broad governance and/or disclosure topics such as CSR performance disclosures - while also addressing problems of voluntary disclosure regimes by way of putting pressure on firms to explain their CSR performance.

[20] Specifically, little is known about the effects of a "comply-or-explain" disclosure regulation. Prior literature examines effects of a "comply-or-explain" governance and the empirical evidence is heavily mixed. For example, several studies find that the comply-or-explain regime is associated with high compliance rate (Akkermans et al. 2007; Arcot, Bruno, and Faure-Grimaud 2010). However, other studies find the opposite, and conclude that the comply-or-explain regime is ineffective (Andres and Theissen 2008; Hooghiemstra and van Ees 2011; MacNeil and Li 2006; Van de Poel and Vanstraelen 2011).

33) broadly states that "statutory auditors and audit firms should only check that the non-financial statement or the separate report has been provided", but does not mandate an audit or assurance of the disclosures[21]. Similarly, the South African King IV principles require combined assurance on a comply-or-explain basis. Finally, the SEC requires independent audit under Section 1502 of Dodd-Frank Act for firms that conclude their products are free of conflict minerals from the DRC. Despite these exceptions, independent assurance of CSR reports remains voluntary in most implementing countries.

Fifth, we find that the CSR reporting regulations give rise to alternative CSR reporting formats across countries. For example, South Africa and the UK mandate integrated reporting, while other countries such as China and Singapore require the publication of standalone CSR reports. The EU and Australia are flexible about CSR reporting format, as long as affected firms provide CSR disclosures. The SEC seeks public feedback for several CSR reporting policy questions including "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC 2016, p. 214).

Finally, there is limited regulatory and/or professional guidance for affected companies in implementing and addressing CSR reporting requirements. In particular, most CSR reporting regulations do not provide reporting guidelines or standards for affected firms. There is some evidence that shows implementation of CSR reporting guidelines enhances CSR disclosure quality. For example, Tauringana and Chithambo (2015) find that the introduction of a CSR reporting guideline in the UK increased the level of CSR disclosures. Similarly, Berkman, Jona, and Soderstrom (2019) document that climate risk disclosures were less useful to the market prior to the issuance of an SEC

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[21] EU member states have the choice to mandate assurance on non-financial reports. For example, France mandates assurance on environmental disclosures since 2012.

guidance in 2010. Moreover, Michelon, Pilonato, and Ricceri (2015) show that the voluntary adoption of GRI guidelines by a sample of UK firms is associated with increased CSR reporting quality, specifically reporting comparability, precision and balance – consistent with reporting guidance improving reporting quality.

Despite absence of specific reporting guidelines in most jurisdictions, we note that a number of countries have published general, voluntary CSR reporting guidelines. For example, the Financial Reporting Council (FRC) in the UK has published a non-binding reporting guidance to "encourage preparers to consider how the strategic report fits within the annual report as a whole, with a view to improving the overall quality of corporate reporting" (FRC 2018, p. 33). The EU has also released a similar non-binding reporting guidelines that provide general, principles-based, guidelines to help affected companies "disclose non-financial information in a relevant, useful, consistent and more comparable manner" (EU-Commission 2017, p. 44). Other countries such as South Africa also provide similar non-mandatory general guidelines in the implementation of CSR reporting mandates (De Villiers, Rinaldi, and Unerman 2014). Further, most jurisdictions also allow affected companies to align their CSR reporting with other national or international reporting frameworks[22]. However, despite these general guidelines, CSR reporting regulations lack specific disclosure and reporting guidelines, potentially giving firms and managers considerable discretion over their CSR disclosures. Another general concern of allowing firms to follow alternative reporting frameworks is that there is considerable heterogeneity in these frameworks, potentially reducing the comparability of CSR disclosure reports which is an important objective of CSR reporting regulations.

[22] These reporting frameworks include the Global Reporting Initiative (GRI), Carbon Disclosure Project (CDP), IIRC Framework, and SASB.

2.3 Theoretical Background

As discussed above, the underlying motivations of CSR reporting regulations considerably vary across countries depending on the socio-economic development and national interests of implementing countries. In this section, we *briefly* discuss theoretical foundations of reporting regulations as they relate to important outcomes of CSR reporting regulations (i.e., reporting objectives, capital-market outcomes and real effects). As our focus is on reviewing empirical evidence, we do not attempt to provide a thorough coverage of alternative theories on disclosure regulations, but instead describe theoretical links between reporting regulations and expected outcomes[23].

Voluntary disclosure theories generally conclude that firms provide disclosures when the benefits exceed the costs (Verrecchia 1983). Accordingly, voluntary disclosure regimes are often associated with information asymmetries which introduce adverse selection problems into capital-markets (Verrecchia 2001). As a result, market liquidity declines as uninformed investors trade less frequently or exit the market to avoid possible losses from trading with the informed counterparties (Leuz and Wysocki 2016; Verrecchia 2001).

Economic theory posits that mandatory disclosure requirements mitigate adverse selection problems by increasing the overall amount of information available to investors (Fu, Kraft, and Zhang 2012; Healy and Palepu 2001). Prior empirical studies show that reduction in information asymmetry or increased reporting quality has important economic consequences including, among others, lower cost of capital (Chen, Dhaliwal, and Xie 2010; Leuz and Verrecchia 2000), increased market liquidity (Lang and Maffett 2011; Leuz and Verrecchia 2000), higher investment efficiency (Biddle et al. 2011; Schleicher,

[23] Leuz and Wysocki (2016) provide a useful synopsis of theoretical links between disclosure regulations and several capital-market outcomes such as liquidity and cost of capital.

Tahoun, and Walker 2010) and improvements in price formation (McMullin, Miller, and Twedt 2019).

The real effects channel is consistent with disclosure regulations indirectly affecting corporate decision-making (e.g., resource allocations) because the increased transparency stemming from disclosure regulations allows outside parties to more effectively monitor firms (Cormier, Lapointe-Antunes, and Magnan 2015; Kanodia 2007; Kanodia and Sapra 2016). Accordingly, disclosure regulations or voluntary commitment to high disclosure affect operating performance and investment efficiency of firms (Kanodia 2007; Leuz and Wysocki 2016). In a CSR setting, reporting regulations could generate social externalities as firms are required to disclose their social and environmental records (Christensen, Hail, and Leuz 2019).

However, empirical evidence on whether disclosure regulations actually improve reporting quality and the information environment is mixed. For example, evidence from Regulation FD – which the SEC introduced to level the playing field among different investors – is mixed. Several studies find a decrease in the level of information asymmetry after Regulation FD, consistent with the regulation creating a more level playing field for all investors (Chiyachantana et al. 2004; Eleswarapu, Thompson, and Venkataraman 2004; Kothari, Shu, and Wysocki 2009). In contrast, other studies find a decline in the overall amount of information, consistent with a "chilling effect" on information flows[24] (e.g., Gomes, Gorton, and Madureira 2007; Sidhu et al. 2008; Wang 2007). The IFRS adoption and SOX studies also provide mixed results on improved reporting quality (Brüggemann, Hitz, and Sellhorn 2013; Coates and Srinivasan 2014; Soderstrom and Sun 2007).

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[24] Koch, Lefanowicz, and Robinson (2013) provide a detailed survey of the Regulation FD literature, and discuss identification challenges in Regulation FD studies as the regulation applies to all US firms.

From the above discussion, it is clear that despite strong theoretical links between high quality reporting and positive economic outcomes, empirical evidence on whether reporting regulation improves reporting quality is less conclusive. As discussed in Section 2.3, the international CSR reporting regulations have several appealing characteristics that allow us to further explore and understand the theoretical expectations of reporting regulations. From a research design perspective, most countries impose the CSR reporting regulations on a subset of firms, effectively providing researchers a local control group of firms unaffected by the reporting regulations in estimating various outcome variables. Prior financial reporting regulations such as Regulation FD, IFRS and SOX Act do not enjoy this important feature. However, an important challenge is that most CSR reporting regulations are less enforced, and follow the 'comply-or-explain' system.

2.4 Consequences of CSR Reporting Regulations

In this section, we review empirical studies in accounting, finance, economics, law and management to assess economic and non-economic consequences of CSR reporting regulations in various institutional settings[25]. We classify the empirical studies into three main categories. In the *first* category, we review empirical studies that examine reporting and disclosure quality effects of the CSR reporting regulations. We also summarize empirical evidence that focuses on effects of the regulations on CSR disclosure *assurance*. The *second* stream of research we review investigates economic consequences of CSR reporting regulations. In our setting, economic consequences denote to both positive and

[25] We relied on Google Scholar search to identify empirical studies focusing on consequences of CSR reporting regulations. We restrict the period from 2005-2019 on the basis that non-industry specific CSR reporting regulations became popular from 2005 onwards (Ho 2017). Given the diversity of CSR related terminologies used in academic research (Huang and Watson 2015), we identified key terms and searched using the 'advanced search' feature of Google Scholar. Our individual searches returned a total of 1,680 results. After excluding unrelated returns and non-empirical studies such as commentary or review papers, we end up with 102 papers. These papers examine the impact of CSR reporting regulations on reporting quality, capital-market and/or firm behavior.

negative effects of the disclosure regulations on the welfare of those parties affected by the information environment such as investors and creditors (Holthausen and Leftwich 1983; Zeff 1978). In the *third* category, we review a growing number of studies that examine real effects of the CSR reporting regulations.

We review these streams of studies in the following subsections. We also discuss whether the documented findings are consistent or inconsistent with the stated objectives of CSR reporting regulation in the specific jurisdiction, consistent with the approach in the review of IFRS reporting by Brüggemann, Hitz, and Sellhorn (2013). Where a given study simultaneously examines reporting quality, capital-market and/or real effects of CSR reporting regulations, we discuss the specific findings in the relevant subsection(s).

2.4.1 Reporting and Disclosure Quality

A key objective of CSR reporting regulations is improvement in reporting and disclosure quality (Christensen, Hail, and Leuz 2019; Ho 2017). This is particularly important considering evidence that CSR disclosures have historically been largely biased toward good news (Boiral 2013; Lyon and Montgomery 2015), boilerplate and copy from prior year as well as largely symbolic rather than substantive for reasons of "greenwashing" (Kim and Lyon 2014; Marquis and Qian 2013; Michelon, Pilonato, and Ricceri 2015). However, prior CSR reporting literature provides evidence based on a voluntary setting. A natural expectation of CSR reporting regulations is, therefore, improvements in the quality, accessibility, and comparability of firm-specific CSR information (Ho 2017).

To this end, several studies provide evidence consistent with CSR reporting regulations improving disclosure quantity and quality in various institutional settings. For example, Ioannou and Serafeim (2017) examine effects of CSR reporting regulations on CSR disclosure quantity across four countries (i.e., China, Denmark, Malaysia, and South

Africa). Using a differences-in-difference design with Propensity Score Matched samples (DID-PSM), they find a significant *increase* in the amount of CSR disclosures of affected relative to a worldwide control group of firms as well as further control group of US firms after the CSR reporting regulations. Similarly, Wang et al. (2017) find that CSR reporting quality *increased* for affected relative to control firms after the CSR reporting regulation in China.

Other studies provide corroborating evidence and show an increase in CSR disclosure level after CSR reporting regulations in several countries including the UK (Hummel and Rötzel 2019), France (Chauvey et al. 2015; Chelli, Durocher, and Fortin 2018), Malaysia (Haji 2013), Australia (Perera, Jubb, and Gopalan 2019), and South Africa (Haji and Anifowose 2016; Setia et al. 2015; Wang, Zhou, and Wang 2019). Mion and Loza Adaui (2019) provide descriptive evidence indicating an increase in CSR disclosure level for firms in Italy and Germany after the EU's CSR directive. They also argue that comparability of CSR reports across the two countries improved after the disclosure mandate. These studies find that the effects of CSR reporting regulations are confined to a group of firms - often larger, better corporate governance and more profitable firms (Haji 2013; Haji and Anifowose 2016; Hummel and Rötzel 2019; Wang et al. 2017; Wang, Zhou, and Wang 2019).

Despite studies suggesting increased level of CSR disclosures, other studies find a decrease or no significant changes in CSR reporting quality after the disclosure regulations[26]. For example, Luque-Vílchez and Larrinaga (2016) find a decrease in the number of affected companies publishing CSR reports in Spain after a CSR disclosure regulation in 2011, and conclude that disclosure quality remains low. However, they

[26] The studies use alternative approaches to measure 'disclosure quality' including the extent to which firms follow CSR reporting guidelines (e.g., GRI guidelines) as well as scoring methods ranging from 0-3 based on pre-defined disclosure checklist.

observe a modest increase in the quality of CSR disclosures after the regulation[27]. In another study, Chauvey et al. (2015) find a decrease in negative disclosures of French firms post CSR reporting regulation and conclude that, despite increasing levels of CSR disclosures over time, disclosure quality remains low (also see Kühn, Stiglbauer, and Heel 2014). Similarly, Marquis and Qian (2013) focus on the Chinese setting and find that mandatory CSR reporting firms increased issuing CSR reports (symbolic), but not the *quality* (substance) of CSR disclosures - indicating that the reporting mandate exerts pressure on firms, such that they are more likely to engage in symbolic rather substantive CSR reporting. Other studies provide corroborating evidence and conclude that CSR disclosures are symbolic in nature rather substantive after CSR regulations, and simply reflect corporate legitimation strategies to comply with the regulations (Cong, Freedman, and Park 2020; Dong and Xu 2016; Dumay and Hossain 2019; Haji and Anifowose 2016; Kansal et al. 2018; Matuszak and Różańska 2017; Setia et al. 2015; Solomon and Maroun 2012).

Several studies examine disclosure quality effects of Section 1502 of the Dodd–Frank Act in the US, and conclude that firms continue to provide boilerplate disclosures after the disclosure regulation (Dalla Via and Perego 2018; Kim and Davis 2016; Schwartz 2016). Islam and van Staden (2018) use a global sample of firms subject to Section 1502 and find that collaboration with social movement organizations (NGOs) and activist protest against companies lead to more comprehensive and transparent mineral disclosures – consistent with the view that disclosure regulation alone may not improve reporting quality. Consistent with this conjecture, Stolowy and Paugam (2018) document a general increase in the amount of CSR disclosures over time for a sample of firms in South Africa, United

[27] A related study by Larrinaga, Luque-Vilchez, and Fernández (2018) examined CSR reporting quality of public sector organizations after the same disclosure regulation in Spain and find no significant changes in CSR disclosure level or quality (also see Peña and Jorge 2019).

States (i.e., S&P 500 index firms) and Europe (i.e., Euro STOXX 600 firms). Stolowy and Paugam (2018) suggest that the increasing levels of CSR disclosures are not necessarily exclusively driven by CSR reporting regulations, but instead reflect other factors such as firm characteristics, industrial affiliation, and the emergence of CSR reporting guidelines (e.g., GRI framework).

In summary, evidence on the effects of CSR reporting regulations on reporting quality is still developing and mixed. Importantly, early studies provide evidence of changes in the *quantity* but not the *quality* of CSR disclosures following CSR reporting regulations. Several studies argue that the increased level (and not the quality) of CSR disclosures reflect symbolic rather than substantive response to CSR reporting regulations (Birkey et al. 2018; Kansal et al. 2018; Marquis and Qian 2013; Schwartz 2016; Solomon and Maroun 2012). Specifically, early evidence suggests that firms continue to be selective of their CSR disclosures post CSR reporting regulations, with a continued use of boilerplate language in CSR disclosure reports (Chauvey et al. 2015; Haji 2013; Setia et al. 2015) These conclusions, albeit based on the development stage of the regulations, cast doubt on expectations that CSR reporting regulations can improve CSR disclosure quality (de Villiers and van Staden 2011). It also reinforces prior claims that CSR reports are unlikely to ever evolve into substantive disclosures due to conflicting interests of various stakeholder groups – leading firms to engage in organized hypocrisy and organizational facades (Cho et al. 2015; Gray 2010).

The main concern of this stream of research, though, is that reporting quality changes may not be exclusively due to the disclosure regulations[28] (Islam and van Staden

[28] The lack of sufficient empirical evidence supporting the extent in which reporting regulations improve reporting quality is not specific to the CSR setting, but has also been observed by prior literature surveys in settings other CSR including SOX literature (Coates and Srinivasan 2014), Regulation FD (Koch, Lefanowicz, and Robinson 2013) and the IFRS adoption literature (Brüggemann, Hitz, and Sellhorn 2013; Soderstrom and Sun 2007). Also, Leuz and Wysocki (2016) reach similar conclusion from the broad literature on disclosure regulations.

2018; Stolowy and Paugam 2018). Few studies rely on DID or similar research designs to isolate the effects of disclosure regulations on reporting quality from other concurrent changes (Hummel and Rötzel 2019; Ioannou and Serafeim 2017). However, we expect more studies using tighter research designs as the CSR reporting regulations move to maturity.

Another important observation is that the "comply-or-explain" nature of CSR reporting regulations in most jurisdictions may signal a weakly enforced reporting regulation, and is a likely explanation of the lack of changes in CSR reporting quality. Chelli, Durocher, and Fortin (2018) contrast France's Parliamentary CSR disclosure regulation to Canada's market disclosure regulation and conclude that the former leads more CSR disclosures. However, it is unclear how alternative CSR reporting regulations (i.e., comply-or-explain *versus* mandatory regimes) affect CSR reporting quality. In short, we still do not know much about the true impact of CSR reporting regulations on reporting and disclosure quality. We summarize key features of this literature in Table 2.2 of Appendix A.

2.4.1.1 CSR Disclosure Assurance

Prior research provides evidence that CSR disclosure assurance has several benefits including increased reporting quality as well as capital-market benefits (Ballou et al. 2018; Casey and Grenier 2014). Experimental studies in controlled settings provide corroborating evidence that CSR disclosure assurance is valued by investors (Cheng, Green, and Ko 2015; Coram, Monroe, and Woodliff 2009). However, prior studies focus on a setting where CSR reporting is voluntary (for a general survey of this literature see e.g., Cohen and Simnett 2014). In this section, we discuss early studies that directly examine effects of CSR reporting regulations on firms' propensity to seek CSR disclosure assurance.

It is not obvious, *ex ante*, how CSR reporting regulation affects CSR disclosure assurance. It is possible that CSR reporting regulation acts as a substitute for CSR disclosure assurance, thereby *reducing* firms' propensity to seek CSR disclosure assurance. Consistent with this conjecture, Casey and Grenier (2014) find that US firms in highly regulated industries (i.e., finance and utilities) are less likely than firms in other industries to obtain CSR assurance, despite facing significant social and environmental risks. They argue that regulatory oversight may be acting as a substitute for CSR disclosure assurance as these industries are highly regulated. However, because they do not exploit a specific CSR reporting regulation, their inference is based on financial regulation in general.

Several studies provide evidence indicating an increase in CSR disclosure assurance after CSR reporting regulations. For example, Ioannou and Serafeim (2017) examine effects of CSR reporting regulations on CSR disclosure assurance in four countries (China, Denmark, Malaysia, and South Africa)[29]. Relative to a worldwide control group of firms as well as further control group of US firms, they find that affected firms significantly increased obtaining voluntary CSR disclosure assurance after CSR reporting regulations in the four countries, consistent with CSR reporting regulations increasing firms' propensity to seek CSR assurance.

Several studies focused on South Africa and examine CSR disclosure assurance following the 'comply-or-explain' CSR disclosure assurance. Maroun (2019) provides evidence that CSR disclosure assurance increases from 38% in 2010 to 54% by 2016 in South Africa, and finds that the number of CSR disclosure items externally assured is associated with higher disclosure quality, regardless of whether reasonable or limited assurance is obtained. Maroun (2019) also finds that CSR reporting quality is

[29] These countries have mandated CSR *reporting*. However, CSR *assurance* is not mandatory in these countries except in South Africa where CSR disclosure assurance is required on a "comply-or-explain" basis under King III. However, the "Comply-or-Explain" assurance requirement was relaxed in the latest South African code of corporate governance, that is King IV of 2016 (Ackers 2017).

higher when assurance is provided by Big 4 than smaller audit firms. In another study, Ackers and Eccles (2015) document an increase in CSR disclosure assurance over time. In their study, assurance uptake is more visible in larger firms and firms in highly regulated and environmentally sensitive industries[30] (i.e., mining, chemical and financial firms).

Finally, Zhou, Simnett, and Hoang (2019) find an increase in combined assurance provisions in South Africa after the integrated reporting mandate. Their results also indicate combined assurance is associated with several capital-market benefits including reduction in analyst forecast errors and dispersion as well as information asymmetry. Caglio, Melloni, and Perego (2020) also find that assurance mitigates negative effects associated with poor integrated reports and increases users' confidence in CSR information.

In summary, evidence on the effects of CSR reporting regulations on CSR disclosure assurance is still limited. Most of existing studies focus on the South African setting where CSR disclosure assurance was initially required on a 'comply-or-explain' basis. Even in this setting, CSR disclosure assurance appears to be driven by industry and firm-specific factors rather than the reporting regulation– consistent with prior evidence in voluntary settings (Sìmnett, Vanstraelen, and Chua 2009). We also do not know much about how CSR regulation affects CSR assurance market, specifically whether the regulations spark or inhibit new CSR assurors entering the CSR assurance market alongside accounting firms. Finally, it remains an empirical question whether CSR reporting regulations exacerbate or attenuate firms' propensity to obtain joint provision of financial and CSR audit (Dal Maso et al. 2019; Lu, Simnett, and Zhou 2019). Table 2.3 of Appendix A summarizes evidence on the effects of CSR regulations on CSR disclosure assurance.

[30] Ackers (2017) conducted a follow-up study and finds a significant increase of CSR disclosure assurance over time in South Africa. Further analyses show that larger firms and firms in environmentally sensitive industries are more likely to obtain CSR disclosure assurance, suggesting that the decision to obtain assurance is driven by industry and firm-specific factors rather than CSR regulations.

2.4.2 Capital-Market Effects

In this section, we survey empirical evidence on capital-market effects of CSR reporting regulations. *First*, we review extant evidence on capital market reactions to important events around the passage of CSR reporting regulations in various institutional settings. *Second*, we review evidence on the capital-market effects of CSR reporting regulations over time. Following prior surveys of financial reporting and disclosure regulations (Brüggemann, Hitz, and Sellhorn 2013; Leuz and Wysocki 2016; Soderstrom and Sun 2007), we classify capital-market research into (1) studies that *directly* evaluate economic consequences of CSR reporting regulations by examining outcomes such as firm value or profitability effects and (2) studies that *indirectly* assess economic consequences by examining effects of CSR reporting regulations on information environment as perceived by capital-market participants. We review these three streams of research in the following subsections.

2.4.2.1 Capital-Market Reactions

Several studies examine capital-market reactions to critical legislative events leading up to the passage of CSR reporting regulations in various institutional settings. Given that the CSR reporting regulations in certain jurisdictions apply only to a subset of firms, several studies rely on difference-in-differences (DID), regression discontinuity design (RDD), and other similar research specifications designed to isolate economic effects of the disclosure regulations.

Overall, the empirical evidence indicates that the CSR reporting regulations generate significant costs for affected firms at announcement dates. For example, Manchiraju and Rajgopal (2017) examine capital-market reactions to eight legislative events leading up to the CSR disclosure regulation in India. Using RDD, they find the

cumulative abnormal returns (CAR) of affected firms significantly declines by 4.1% relative to control firms around the eight events[31]. Consistent with cross-sectional variations in capital-market reactions, they show that firms that spend more on advertising are less affected by the CSR rule. They also find a significant decline in Tobin's Q of affected firms relative to control firms around event dates that increase the likelihood of CSR regulation. Similarly, Chen, Hung, and Wang (2018) use DID-PSM sample specifications and provide corroborating evidence showing that CAR of affected firms significantly declines after the CSR reporting regulation in China. These studies suggest that capital-markets perceive CSR reporting regulations as bad news.

In another study, Grewal, Riedl, and Serafeim (2019) study capital-market reactions to three events associated with the passage of the EU's CSR reporting directive. Using DID, they find an overall negative market reaction to the passage of CSR reporting directive (an average decline of –0.79%, equivalent to $79 million of market value). Cross-sectional analyses show that the negative market reaction is concentrated for firms with weak pre-regulation CSR disclosure and performance records, suggesting that equity markets perceive enhanced reporting regulations are more costly to firms with weak pre-regulation CSR performance and information environments. Their results support this latter notion by showing firms with above-median and stronger CSR records pre-regulation experience a positive abnormal return.

Several other studies examine capital-market reactions to important events around the passage of Dodd-Frank Act sections that mandate CSR disclosures for certain US firms (i.e., Section 1502 and 1504). Consistent with the above results in other countries, the studies show that the US capital-market reacts negatively to events around the passage of

[31] Manchiraju and Rajgopal (2017) are careful to recognize a common limitation in RDDs that the treatment effects are localized around the threshold firms and therefore the findings are not necessarily generalizable to the entire population.

Dodd-Frank Act sections that contain CSR disclosure requirements (Elayan et al. 2019; Healy and Serafeim 2020; Hombach and Sellhorn 2019; Sankara, Patten, and Lindberg 2019). Again, the negative capital-market reactions are confined to a subset of firms consistent with differential effects of CSR reporting regulations (Elayan et al. 2019; Seitz 2015). For example, Hombach and Sellhorn (2019) find firm value of affected firms, on average, significantly declines around 12 events associated with the passage of Section 1504. Importantly, they find that the negative firm value effects is stronger for firms that face greater reputational risk, consistent with these firms facing higher exposure to potential adverse capital-market reactions from public pressure (also see e.g., Birkey et al. 2018). Similarly, Elayan et al. (2019) find negative stock market reaction to events leading up to the passage of Section 1502 is more negative for firms that source their minerals from the Congo and adjoining countries, and for firms with prior records of human rights violations.

Other studies focus on capital-market reactions to first time CSR disclosures after the regulations. For example, Sankara, Patten, and Lindberg (2019) document that the negative capital-market reactions to Section 1502 is less pronounced for firms with more extensive CSR disclosures. Similarly, Elayan et al. (2019) find that adverse capital-market reactions to Section 1502 are more pronounced for firms with ambiguous disclosures. Further, Griffin, Lont, and Sun (2014) find the negative capital-market reactions to Section 1502 is less pronounced for higher public information environment firms (i.e., larger and more analyst following firms). Mittelbach-Hoermanseder, Hummel, and Rammerstorfer (2020) find that CSR disclosure has positive (negative) relation with firm value before (after) the CSR reporting Directive in the EU – suggesting that the value-relevance of CSR disclosures depends on CSR reporting requirements (i.e., voluntary *versus* mandatory). Finally, Wang and Li (2016) find positive capital-market reactions to

the first time issuance of CSR reports both for mandatory and voluntary CSR reporting firms in China, suggesting that investors appreciate both voluntary and mandatory CSR disclosures.

Taken together, the event studies almost unanimously document adverse capital-market reactions to events leading up to the CSR reporting regulations[32] (Birkey et al. 2018; Chen, Hung, and Wang 2018; Grewal, Riedl, and Serafeim 2019; Hombach and Sellhorn 2019; Manchiraju and Rajgopal 2017). However, there is considerable cross-sectional variation in capital-market reactions across firms and industries, consistent with investors taking cues from various firm-specific factors including pre-existing CSR performance and disclosure records of affected firms. We summarize key themes of the event studies in Table 2.4 of Appendix A.

2.4.2.2 Direct Economic Consequences

A number of studies examine the long-term effects of CSR reporting regulations on firm value, profitability, information asymmetry, liquidity, cost of capital/debt, and stock price crash risk of affected firms. Majority of the studies in this stream focus on firm value effects (measured as Tobin's Q) of CSR reporting regulations.

Consistent with the disclosure regulations reducing information asymmetry, early studies almost unanimously find that firm value of affected firms *increases* after CSR reporting regulations in various institutional settings[33] (Bhagawan and Mukhopadhyay

[32] The only exception is the study by Cousins et al. (2018) who examine capital-market reactions to eight events around the passage of the UK's Modern Slavery Act (MSA) in 2015. They find *no* evidence of firm value effects for the combined events or individual event dates. However, they find a positive stock market reaction on the first trading day when the stock market learned about the UK Government's plans to tackle modern slavery through disclosure regulation. The positive effect is stronger for firms with a lower risk of modern slavery in their business and supply chain.

[33] This line of literature is different from the 'event studies' as the latter focuses on legislative events around the CSR reporting regulations and so capture investors' expectations rather than investors' actual reactions to mandated CSR disclosures.

2018; Ioannou and Serafeim 2017; Jadiyappa, Iyer, and Jyothi 2019; Krüger 2015; Rossi and Harjoto 2019). Cross-sectional analyses show that the positive valuation outcomes are larger for (1) firms most affected by the disclosure regulations (Baboukardos 2017; Krüger 2015; Swift, Guide Jr, and Muthulingam 2019), (2) firms with higher CSR disclosure quality (Caglio, Melloni, and Perego 2020), and (3) firms in more complex information environment (Lee and Yeo 2016). In a related study, Tang and Zhong (2019) use international data set from 46 countries and find that the probability of stock price crash risk significantly declines for affected firms in countries that implement CSR disclosure regulations.

The positive firm valuation outcomes documented in the above stream of studies is consistent with CSR reporting regulations reducing information asymmetry for affected firms. Consistent with this view, Hung, Shi, and Wang (2013) and Krüger (2015) find a decrease in information asymmetry for affected firms relative to control firms after the CSR reporting regulations in China and the UK, respectively. Other studies provide corroborating evidence and show a decrease in information asymmetry after CSR reporting regulations in several institutional settings (Zhong and Gao 2017). Similarly, Tang and Zhong (2019) use international data set and show that CSR reporting regulations decrease likelihood of stock price crash risk more for less transparent firms pre-reporting regulations, consistent with the reporting regulations reducing information asymmetry for firms in opaque information environments. However, Wu, Zhao, and Chen (2019) find a decrease in stock price informativeness of affected firms relative to control firms after the CSR reporting regulation in China, indicating that the CSR reporting regulation does not reduce information asymmetry in the Chinese capital-market.

Several other studies focus on firm profitability effects (measured as ROA and ROE). For example, Chen, Hung, and Wang (2018) and Mukherjee, Bird, and Duppati

(2018) find firm profitability of affected firms significantly *decreases* relative to control firms following CSR reporting regulations in China and India, respectively. In contrast, Bhagawan and Mukhopadhyay (2018) and Bhattacharyya and Rahman (2019) document profitability of affected firms significantly *increases* relative to control firms after the CSR reporting regulation in India. Swift, Guide Jr, and Muthulingam (2019) show that firm profitability (ROA) of high visibility supply chain firms, relative to low visibility firms, *increases* after the passage of Section 1502. At the same time, Krüger (2015) find no significant profitability effects of CSR reporting regulation in the UK. In another study, Bhattacharyya, Wright, and Rahman (2019) report no associated between actual CSR spending and ROA, but find a negative association between CSR spending and stock return after the CSR regulation in India. The mixed results in profitability studies appear to suggest that the positive valuation outcomes of CSR reporting regulations stem from reductions in information asymmetry (i.e., capital-market effects) rather than improvements in operating performance (i.e., real effects) (Krüger 2015).

Other studies examine liquidity effects of the CSR reporting regulations, and the evidence is also mixed. Barth et al. (2017) and Caglio, Melloni, and Perego (2020) find that increased reporting quality is positively associated with liquidity for South African firms. However, Kajueter, Kerkhoff, and Mauritz (2019) use RDD and find no overall liquidity effects after the CSR disclosure directive in the EU for their full sample of EU firms. Cross-sectional analyses in Kajueter, Kerkhoff, and Mauritz (2019) show that firms in weaker institutional environments and few prior CSR disclosure regulations experience small but significant liquidity benefits. However, the CSR disclosure regulation does not provide incremental liquidity benefit for firms in stronger institutional environments.

Finally, a number of studies consider whether CSR reporting regulations affect access to finance. For example, Xu, Xu, and Yu (2019) find cost of debt *decreases* for

affected firms relative to control firms after CSR reporting regulation in China. They also show that affected firms have more access to long-term debt after the reporting regulation. In the same Chinese setting, Gong, Xu, and Gong (2018) find that high CSR disclosure quality is associated with lower costs of corporate bonds, and more for voluntary than mandatory CSR reporting firms – consistent with bond investors already expecting CSR disclosure from mandatory CSR firms than voluntary firms. In another study, Zhou, Simnett, and Green (2017) document that cost of capital is significantly lower for South African firms that provide high quality integrated reports. However, Barth et al. (2017) find no significant cost of capital effects after the integrated reporting mandate in South Africa. Finally, Lemma et al. (2019) find that integrated reporting is associated with lower (higher) levels of debt (equity) financing, suggesting that a firm's financing needs may be driving integrating reporting.

In sum, empirical evidence on the economics of CSR reporting regulations is still limited but growing. The evidence suggests adverse capital-market reactions around announcement dates, but positive firm value outcomes over time consistent with the disclosure regulations reducing information asymmetry. However, evidence on the impact of CSR reporting regulations on operating performance is conflicting, albeit limited. Given differences in CSR reporting regulations across countries (e.g., comply-or-explain *versus* mandatory), it remains an empirical question whether alternative forms of CSR reporting regulations lead to similar economic outcomes. Table 2.5 of Appendix A summarizes key findings of this literature.

2.4.2.3 Indirect Economic Consequences

In this subsection, we review a third stream of studies that investigate indirect economic consequences of the CSR reporting regulations by examining whether CSR regulations

improve the information environment of affected firms. The idea is that improved information environment will consequently create positive economic benefits for affected firms. The extant evidence has so far examined effects of CSR reporting regulations on (1) analysts' report informativeness and (2) financial reporting quality.

A number of studies find CSR reporting regulations improve investment professionals' report informativeness in several countries (Bernardi and Stark 2018; Cormier, Lapointe-Antunes, and Magnan 2015; Shi and Song 2019; Zhou, Simnett, and Green 2017). For example, Zhou, Simnett, and Green (2017) find a decrease in analysts' earnings forecast error and dispersion after the integrated reporting mandate in South Africa. In the same South African setting, Caglio, Melloni, and Perego (2020) document a decrease in analysts' earnings forecast dispersion is associated with integrated report readability. Bernardi and Stark (2018) find that analyst forecast accuracy improves after the integrated reporting mandate in South Africa, particularly for non-finanical firms relative to finanical firms. In another study, Bernardi and Stark (2018) find an increase in analysts following after the CSR disclosure regulations in the EU and UK. Finally, Dhaliwal et al. (2012) use data from 31 countries and show that issuance of standalone CSR reports is associated with lower analyst forecast error both for voluntary and mandatory CSR reporting firms.

Other studies find CSR reporting regulations improve financial reporting quality. For example, Wang, Cao, and Ye (2018) report a decrease in earnings management for affected firms relative to control firms after the CSR reporting regulation in China. Similarly, Cheng and Kung (2016) find that CSR reporting regulation in China constrains accounting conservatism and earnings management, although the effects are less significant for state-owned firms. However, Liao, Chen, and Zheng (2019) partition firms in China into voluntary *versus* mandatory CSR firms and find that voluntary CSR firms are

significantly less likely to engage in fraudulent behavior. In another study, Nair et al. (2019) find a decrease in earnings management in India after the CSR reporting regulation. They also find that the decrease in earnings management is stronger (weaker) for firms with retail (institutional) investors, consistent with the CSR disclosure regulation enhancing the information environment for retail investors. Finally, Baboukardos and Rimmel (2016) find an *increase* in the earnings' valuation co-efficient after the integrated reporting mandate in South Africa, consistent with the expectations of integrated reporting. However, they report a *decline* in the value relevance of net assets, seemingly due to the multiple capitals appraoch of integrated reporting[34].

Collectively, the extant evidence indicates that the CSR regulations improved analysts' report informativeness and certain metrics of financial reporting quality. Another important observation is that the positive capital-market outcomes are confined to a subset of firms. Table 2.6 of Appendix A summarizes key findings of this literature.

2.4.3 Real Effects of CSR Reporting Regulations

Understanding the real effects of reporting and disclosure regulations is increasingly becoming first-order importance in accounting and related research (Kanodia and Sapra 2016; Leuz and Wysocki 2016). However, empirical evidence on the real effects of disclosure regulations is scarce (Leuz and Wysocki 2016), despite such evidence having the potential to inform accounting policy debates (Kanodia 2007). A basic premise in real effects research is that mandatory disclosure requirements will have a second order effect on firm behavior as the increased transparency allows outsiders to more closely monitor

[34] In another study, Tlili, Othman, and Hussainey (2019) find the value relevance of organizational capital significantly increased after the implementation of the integrated reporting mandate in South Africa.

corporate decision-making (Kanodia and Sapra 2016). A limited number of studies provide empirical evidence supporting real effects of firm disclosures and reporting regulations (Chen, Young, and Zhuang 2012; Doshi, Dowell, and Toffel 2013; Gao and Sidhu 2018).

In this section, we review a growing number of empirical studies that examine real effects of CSR reporting regulations[35]. We identify three streams of real effects studies. The *first* stream focuses on real effects of CSR reporting regulations on CSR spending. A *second* stream of studies examine environmental effects, particularly impact of CSR reporting regulations on firm-level pollution and carbon emissions. Finally, we review a third stream of studies that examine unintended real effects of CSR reporting regulations.

2.4.3.1 CSR Spending and Activities

Several studies examine the impact of CSR reporting regulations on CSR spending and overall CSR ratings as provided by independent rating bodies (e.g., Thomson Reuters ASSET4). For example, Fiechter, Hitz, and Lehmann (2019) examine effects of the EU's CSR reporting directive on CSR performance of affected EU firms that previously did not engage in CSR reporting. Using Thomson Reuters ASSET4 CSR scores to measure overall CSR performance, they find a significant *increase* in the CSR performance of previously non-reporting firms after the disclosure directive relative to EU and US control group of firms. Similarly, Jackson et al. (2020) use ASSET4 CSR scores for an international data set of firms in 24 OECD countries[36] and provide a corroborating evidence. Specifically, they find a significant *increase* in the CSR performance of firms in countries with

[35] Given that the CSR reporting mandates are imposed on a subset of firms in most countries, they provide an attractive quasi-natural experimental setting to examine real changes in affected firms' CSR performance relative to control group of unaffected firms. However, we note that not all studies find a suitable control group of firms unaffected by the regulations and instead rely on pre- and post-regulation analyses.

[36] The Organization for Economic Co-operation and Development (OECD).

mandatory CSR reporting requirements. However, they do not find a decline in corporate *irresponsibility* scores as provided by ASSET4. Boodoo (2016) finds similar results showing CSR scores of affected firms improved after the CSR regulation in India relative to a control group of US firms.

A number of other studies use actual CSR spending data and find results showing an overall *increase* in CSR spending after the CSR regulation in India (Bansal, Khanna, and Sydlowski 2019; Dharmapala and Khanna 2018; Marques and Srinivasan 2018). For example, Dharmapala and Khanna (2018) find a significant *increase* in CSR spending of affected firms relative to control firms after the CSR regulation in India. However, they find that firms initially spending more than 2% reduced their CSR expenditures to just about the required 2% after the mandate, indicating a potential unintended consequence of specifying a certain level of CSR spending (also see e.g., Bansal, Khanna, and Sydlowski 2019; Kapoor and Dhamija 2017).

Consistent with the CSR reporting regulations generating positive societal externalities, Christensen et al. (2017) find a significant *decrease* in employee injuries and mining-related citations of SEC-registered mining firms relative to a control group of non-SEC registrants after Section 1503 of Dodd-Frank Act[37]. However, they also find a significant *decline* in labor productivity following the disclosure mandate, consistent with the disclosure regulation creating a trade-off between safety and labor productivity. In another study, Li and Raghunandan (2019) report a decline in safety violations of mining firms after the introduction of the Dodd-Frank Act. Similarly, Chen, Hung, and Wang (2018) document a significant *decrease* in workplace fatalities (i.e., deaths) of affected

[37] Section 1503 of the Dodd-Frank Act requires SEC-registered mining firms to disclose their mine-safety disclosures (MSD) in regulated financial reports.

relative to control firms after the CSR regulation in China, consistent with the CSR regulation creating positive externalities.

Other studies further provide corroborating evidence indicating that the CSR reporting regulations affect internal decision-making and resource allocations of affected firms. For example, Barth et al. (2017) document that the integrated reporting mandate and the embedded integrated thinking concept is associated with higher investment efficiency, consistent with the reporting regulation improving internal decision-making of South African firms. Similarly, Ni and Zhang (2019) find a significant decrease in dividend payouts of affected firms relative to control firms after the CSR reporting regulation in China, consisting with CSR reporting regulations adversely affecting firm profitability (Chen, Hung, and Wang 2018)

Overall, the extant evidence indicates that the CSR reporting regulations improve CSR performance of affected firms, which in turn generates positive social externalities. However, as with the capital-market studies - the documented effects of the regulations are confined to a subset of firms, particularly for firms that previously did not engage in CSR activities (Dharmapala and Khanna 2018; Fiechter, Hitz, and Lehmann 2019; Jackson et al. 2020). Finally, it is also clear that the CSR reporting regulations generate positive social externalities, although they are associated with costs to shareholders.

2.4.3.2 Carbon Emissions

A growing number of studies focused on the environmental implications of CSR reporting regulations in several countries. For example, Gramlich and Huang (2017) find a decrease in pollution levels of affected firms relative to control firms after the CSR reporting regulation in China, and the decrease is more pronounced among affected firms in environmentally sensitive industries than firms in service sectors. In the same Chinese

setting, Chen, Hung, and Wang (2018) find that cities most affected by the CSR reporting regulation (i.e., cities with a high proportion of affected firms) experience a greater decrease in their industrial wastewater and SO_2 (sulfur dioxide) emission levels[38]. These studies suggest that the CSR reporting regulation in China is associated with changes in firm behavior that create important societal benefits – consistent with one of the stated objectives of the CSR reporting regulation in China.

In the UK, Downar et al. (2019) and Jouvenot and Krueger (2019) both find significant reductions in carbon emissions (between 15 and 18%) after the CSR disclosure regulation in the UK. An appealing characteristics of the UK's CSR disclosure regulation is that listed firms are required to disclose their carbon emissions in their traditional annual reports, although these firms already had to publicly report their emissions to a central government register before the disclosure regulation. Motivated by this, Downar et al. (2019) compare carbon emissions of installations owned by affected UK firms and installations owned by unaffected firms and show a significant decrease in carbon emissions of affected firms for up to 18% after the disclosure regulation in the UK relative to control firms. Their results also show that the emission reductions occur across all industries but are more pronounced for firms in the energy industry. Jouvenot and Krueger (2019) provide a corroborating evidence and find a significant 15% decrease in carbon emissions of UK firms after the disclosure regulation relative to a control group of European firms. The decrease is larger for firms with high levels of tangible assets, and persists both for *absolute* and *relative*[39] carbon emissions.

[38] Recall that Chen, Hung, and Wang (2018) also find a decrease in firm profitability (ROA and ROE) and firm value of affected firms following the CSR reporting regulation in China, consistent with the disclosure regulation creating positive societal benefits at the direct expense of firm shareholders.

[39] The disclosure mandate requires listed U.K. firms to disclose their *absolute* (i.e., annual quantity of carbon emissions in tons of carbon dioxide equivalent) and *relative* carbon emissions (emissions based on firm size measures such as assets or sales revenue) in their annual reports (Jouvenot and Krueger 2019).

In the US, Tomar (2019) examine carbon emissions effects of Greenhouse Gas Reporting Program introduced by the US Environmental Protection Agency[40] (EPA) in 2010. Tomar (2019) compares emissions disclosed by US facilities to Canadian facilities and find a 7% decrease in emissions after the disclosure regulation, and reductions in emissions are larger for facilities with more disclosing peers nearby consistent with benchmarking-learning hypothesis. Results also show that within-industry emissions dispersion declines, indicating greater overlap in US facilities' information sets after the disclosure program (for a similar observation see Jackson et al. 2020). However, Matisoff (2013) examines several state-level carbon emission reporting requirements in the US and finds no significant changes in carbon intensity or total carbon emissions after *state-level* carbon disclosure requirements. Interestingly, Matisoff (2013) separately examines effects of the voluntary participation in Carbon Disclosure Project (CDP) and finds that the CDP led to a modest decrease in carbon emissions and electricity output for participating firms relative to non-participating firms.

In sum, early empirical studies provide convincing evidence indicating that CSR reporting regulations significantly decrease carbon emissions of affected firms in important institutional settings. However, as the studies focus on the early stages of the disclosure regulations – it is unclear whether these effects persist or disappear over time.

2.4.3.3 Unintended Consequences

Several studies provide evidence consistent with unintended consequences of the CSR reporting regulations. For example, Parker and Vadheim (2017) use georeferenced data from the Democratic Republic of the Congo (i.e., the target of the legislation) and examine

[40] The EPA carbon emissions reporting requires US facilities emitting over 25,000 tons of carbon dioxide equivalent to report their emissions to the EPA. However, affected facilities are not required to disclose carbon emissions in their annual reports.

humanitarian consequences of Section 1502 of the 2010 Dodd-Frank Act. They find that the disclosure regulation incited violence in Congo by increasing looting of civilians and shifted militia battles toward unregulated gold-mining territories. In another study, Parker, Foltz, and Elsea (2016) use the same setting and examine effects of Section 1502 on the mortality of children born in Congo. They find a significant increase in infant deaths in villages near the policy-targeted mines. They also find that mothers' consumption of infant health care goods and services decreased following the passage of the legislation. Further, Emerson (2017) finds that deaths by violent conflicts have increased per year after Congress and the SEC enacted Section 1502. He also finds that GDP per capita and US Foreign Direct Investment in Congo and other affected countries have decreased after the disclosure regulation, consistent with the regulation inciting a *de facto* embargo on these countries.

The results of these studies are based on the premise that the disclosure regulation caused US firms to close significant business operations in the legislation targeted countries[41]. Consequently, the closure of US firms' business operations in the targeted region exacerbated the already poor employment opportunities for the working class in the targeted region thus sparking violence. These studies provide evidence consistent with unintended consequences of the disclosure regulation[42].

Consistent with the above inference, Rauter (2019) exploits a similar disclosure Directive in the EU which requires mandatory disclosures on extraction payments made by

[41] While Section 1502 was passed on the basis of constraining human rights violations in Congo, it is also essentially a *de facto* boycott on mineral purchases by US listed firms to curb financing warlords and armed militias in Congo.

[42] However, Koch and Kinsbergen (2018) review evidence on the effects of the legislation and argue that the unintended consequences of Section 1502 legislation declined over time.

European oil, gas, and mining firms to foreign host governments[43]. Consistent with the objectives of the Directive, Rauter (2019) finds an increase in extractive payments of affected firms to host governments relative to control firms after the disclosure Directive. However, he finds affected firms - relative to control firms - reduced investments in legislation targeted countries after the disclosure Directive, suggesting that affected firms close business operations in these countries and reallocate their investments elsewhere. Rauter (2019) also does not find reductions in corruption in host governments post the disclosure Directive.

In summary, early studies provide evidence supporting real effects of CSR reporting regulations in various settings. Importantly, the evidence is consistent with the disclosure regulations generating both positive and negative societal externalities. We summarize key features of the real effects literature in Table 2.7 of Appendix A.

2.5 Discussion and Future Research Suggestions

The recent CSR reporting regulations present an attractive quasi-natural experimental setting to examine a number of important research questions. In this section, we discuss key opportunities and challenges for future research. We frame our discussion around the broad themes of the paper: (1) reporting and disclosure quality effects (2) capital-market effects and (3) real effects of the CSR reporting regulations. We also identify a number of unexplored research questions that address macroeconomic effects of CSR reporting regulations.

[43] The EU passed a disclosure directive in 2013 (Directives 2013/34/EU and 2013/50/EU) and requires extractive firms to publicly disclose their payments to foreign host governments in a granular report on their website. This directive applies to all extractive firms in the EU, Norway, Iceland, and the United Kingdom, and is intended to combat corruption in natural resource rich countries.

2.5.1 Reporting Quality Effects

To the extent reporting and disclosure regulations substantively improve reporting quality still remains an open empirical question. For example, the IFRS adoption literature still does not reach empirical consensus on improvements in reporting and disclosure quality, even after the implementation of a single set of reporting standards (Brüggemann, Hitz, and Sellhorn 2013). Similar conclusions abound in other reporting and disclosure regulations such as Regulation FD (Koch, Lefanowicz, and Robinson 2013), SOX Act (Coates and Srinivasan 2014), industry-specific environmental reporting regulations (Larrinaga et al. 2002) and more generally reporting and disclosure regulations (Leuz and Wysocki 2016). One likely explanation is that reporting is part of a broader institutional setting including legal and political systems of the countries in which individual firms operate (Leuz and Wysocki 2016; Soderstrom and Sun 2007). Improvements in reporting quality are unlikely to arise without substantive concurrent changes in the supporting infrastructure, specifically reporting enforcement (Coates and Srinivasan 2014). Consistent with this conjecture, Christensen, Hail, and Leuz (2013) and Gao and Sidhu (2018) respectively provide evidence showing capital-market and real effects around IFRS adoption are driven by concurrent changes in reporting enforcement.

As with financial reporting regulations, a key objective of CSR reporting regulations is to improve reporting quality - specifically accessibility, comparability and relevance of CSR information. However, our review of the mandatory CSR reporting literature suggests some evidence of increased disclosure quantity, but CSR disclosure quality remains low after CSR reporting regulations in various countries. In this subsection, we discuss a number of research questions that remain unexplored.

First, an important gap is whether CSR reporting regulations affect the *materiality* of CSR disclosures. It is possible that CSR reporting regulations cause firms to provide

more immaterial disclosures – either strategically or unintentionally. In an experiment, Guiral et al. (2019) find that investors unintentionally process *immaterial* and positive CSR information when evaluating a firm's fundamental value, but use more deliberate and systematic approach to process *material* or negative CSR issues. In fact, the SEC (2016, p. 213) seeks feedback for several ex ante questions, one of which is whether "would line-item requirements for disclosure about sustainability or public policy issues cause registrants to disclose information that is not material to investors?". Recent studies use SASB's materiality classification and find that material *versus* immaterial CSR disclosures and ratings differentially affect capital-markets (Grewal, Hauptmann, and Serafeim 2020; Khan, Serafeim, and Yoon 2016). Specifically, Grewal, Hauptmann, and Serafeim (2020) document that firms voluntarily disclosing more SASB-identified material CSR information have higher stock price informativeness, whereas immaterial disclosure are not associated with stock price informativeness. Although SASB's materiality classification is still developing (SASB 2018), it provides researchers a reasonable proxy to examine whether CSR reporting regulations cause firms to provide more material (immaterial) CSR disclosures and the associated capital-market consequences.

Second, there is limited evidence on network or spillover effects of CSR reporting regulations – specifically whether and how CSR reporting regulations affect CSR disclosure choices of related, but unaffected firms. Hung, Shi, and Wang (2013) provide early evidence showing firms unaffected by the CSR reporting regulation in China start voluntarily issuing CSR reports on or after the CSR reporting regulation. Importantly, they also find that late voluntary CSR reporting firms experience a reduction in information asymmetry. Empirical evidence in settings other than CSR also shows that a firm's disclosure has important economic consequences for its peers, and specifically peer firms' information environment (Badertscher, Shroff, and White 2013; Shroff, Verdi, and Yost

2017). However, such network effects are not necessarily positive, but can also be unfavorable for some firms (Bushee and Leuz 2005). The network effects of CSR reporting regulations deserves more attention[44].

Third, reporting format effects of mandated CSR information is relatively unknown, especially whether CSR information should be integrated in or separated from financial reports. Currently, the CSR reporting regulations in most countries do not require specific reporting format of CSR disclosures. In a 2017 survey of the largest 4,900 companies from 49 countries, KPMG (2017) reports that 60% of global firms integrate CSR information in their financial reports, up from 56% in 2015. Cohen et al. (2012) provide corroborating evidence showing that companies disclose a wide variety of CSR measures both in their regulated financial reports and other alternative outlets such as company websites and investor promotion materials. Cannon et al. (2020) show that firms that disclose CSR information in 10-K achieve a competitive advantage relative to non-disclosing firms, indicating that including CSR information in regulated financial reports is incrementally informative (also see Christensen et al. 2017). In an experiment with professional investors, Reimsbach, Hahn, and Gürtürk (2018) find that integrating CSR information in financial reports increases access of this information. However, other experimental studies find unintended effects of integrating CSR information in financial reports (Bucaro, Jackson, and Lill 2019). Reporting format effects of CSR information

[44] Brown, Tian, and Wu Tucker (2018) use mandated risk factor disclosure setting to explore spillover effects of SEC comment letters and find results consistent with network effects. Specifically, they find that firms not receiving comment letters from the SEC significantly modify their subsequent year's risk disclosures if the SEC has commented on the risk factor disclosure of (1) the industry leader, (2) a close rival, or (3) numerous industry peers. In a CSR setting, Cao, Liang, and Zhan (2019) use the passage or failure of CSR proposals by a narrow margin of votes to examine peer effects of CSR. They find that related firms adopt similar CSR practices following the passage of a close-call CSR proposal and its implementation by peer firms.

deserves further empirical investigation, especially considering regulatory interest in reporting format of CSR information and concerns of information overload[45].

Finally, we find no studies devoted to developing empirical measures of CSR reporting quality. As a result, the CSR literature struggles to define and measure reporting quality. More broadly, Leuz and Wysocki (2016, p. 541) argue that "accounting research has not yet found a satisfactory way to empirically *identify* reporting quality". Extant literature largely relies on content analyses, researcher self-constructed disclosure indices, readability measures, and other subjective techniques to measure CSR reporting and disclosure quality. However, it is difficult to use most of these techniques in large sample studies. A number of studies provide several measures of financial reporting quality (Chen, Miao, and Shevlin 2015; De Franco, Kothari, and Verdi 2011). However, it is not clear whether extant measures of financial reporting quality are applicable to CSR disclosures. Development of CSR reporting quality measures remains an important gap.

2.5.2 Capital-market and Macroeconomic Effects

There are a number of important capital-market research questions that remain relatively under-researched. *First*, an important gap is whether CSR reporting regulations cause firms with incentives to hide poor CSR performance to use boilerplate disclosure language as an avoidance strategy. Prior literature in other settings provides evidence that firms use boilerplate language to obfuscate poor performance (Li 2008) or proprietary information (Hope, Hu, and Lu 2016). However, little is known about whether firms use boilerplate language as an avoidance strategy to disclosure regulations (Christensen, Hail, and Leuz 2019). For example, Campbell et al. (2014) examine information content of risk disclosures

[45] The SEC is currently seeking public feedback for a number of CSR reporting policy issues including the question of "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC 2016, p. 214).

following risk factor disclosure mandate by the SEC and find that firms with greater risks disclose more risk factors. However, Cho et al. (2015) find that contradictory societal and institutional pressures force firms to engage in hypocrisy that lead firms to provide symbolic CSR reports. The CSR reporting regulations offer an interesting setting to explore whether mandatory CSR firms with weak CSR reporting incentives to use boilerplate language as an avoidance strategy, and whether the level of *specificity* of CSR disclosures is associated with better capital-market outcomes (Hope, Hu, and Lu 2016).

A *second* gap is whether the CSR reporting regulations differentially affect small and large investors. It is possible that the CSR regulations increase information processing costs for smaller investors. Consistent with this conjecture, Blankespoor, Miller, and White (2014) find an increase (decrease) in information asymmetry (liquidity) driven by small investors for XBRL adopting firms around 10-K filings after the SEC mandated XBRL.

Third, understandably at this early stage, we find no empirical evidence on potential macroeconomic effects of CSR reporting regulations. The IFRS adoption literature provides some evidence of an increase in foreign direct investments when mandatory IFRS adoption leads to improved comparability (Beneish, Miller, and Yohn 2015; Defond et al. 2011). It remains unexplored if CSR reporting regulations give rise to foreign direct investments based on the notion that the reporting regulations improve the information environment and reduce information asymmetry (Hung, Shi, and Wang 2013; Krüger 2015; Tang and Zhong 2019).

Finally, we call for research that links CSR reporting regulations to general economic, environmental and political outlook. For example, do regulators push for more CSR disclosure regulations if the macro-economic outlook is positive, but deregulate in poor economic times? Do environmental scandals give rise to more CSR reporting regulations? Also, does change from conservative to liberal political leadership or vice-

versa affect CSR reporting regulations? For example, republican-majority US Congress repealed Section 1504 of Dodd-Frank Act in 2017. This type of research will be particularly relevant in a post COVID-19 world.

2.5.3 Real Effects of CSR Reporting Regulations

The CSR reporting regulations share some important features with financial reporting regulations. For example, as with financial reporting regulations, firms must develop reporting infrastructure to comply with the reporting regulations. However, there are important differences. For example, a key difference is that CSR disclosure audience and the uses of CSR information are much broader (Christensen, Hail, and Leuz 2019). Another unique feature of CSR reporting regulations is the embedded CSR activities beyond reporting and disclosure requirements. That is, CSR *reporting* cannot be entirely disentangled from CSR *practices,* leading firms to engage in costly CSR causes or explain reasons otherwise. This latter feature introduces an additional layer of costs on firms, especially for those firms that previously did not voluntarily engage in CSR activities. Therefore, CSR reporting regulations present an interesting quasi-natural experiment to examine real effects of reporting regulations. We discuss a number of future research directions that remain relatively unexplored.

First, there is limited evidence on whether real effects associated with CSR reporting regulations persist or wane over time. As discussed in section 2.4.3, a growing number of studies provide early evidence supporting real effects of CSR reporting regulations (e.g., Barth et al. 2017; Dharmapala and Khanna 2018; Fiechter, Hitz, and Lehmann 2019; Ni and Zhang 2019). However, these studies provide evidence based on the early stages of CSR reporting regulations, rather than real effects after implementation. One possible channel in which CSR reporting regulations could have long-term effects is

whether firms shun or abandon environmentally irresponsible business operations. Early studies provide indirect evidence suggesting firms abandon certain operations following CSR reporting regulations (Christensen et al. 2017; Emerson 2017; Rauter 2019). However, it is possible that firms re-allocate resources and operations elsewhere (Rauter 2019). In our view, the long-term real effects of CSR reporting regulations represent an important area for further research.

Second, there is limited evidence on whether CSR reporting regulations cause affected firms to go private or go dark as an avoidance strategy. It is also unclear the extent to which CSR reporting regulations discourage firms to go public or cross-list in countries that mandate CSR disclosures. Fiechter, Hitz, and Lehmann (2019) focus on previously non-reporting EU firms and find no evidence of size management as an avoidance strategy after the CSR disclosure directive in the EU. Prior studies in other settings provide empirical evidence showing that firms manage size downward to avoid disclosure costs[46] (e.g., Bernard, Burgstahler, and Kaya 2018). If firms manage size downward and sacrifice growth to avoid costs of CSR reporting regulations through, for example, reductions in number of employees and/or decrease in tax payments, such strategies would potentially have negative welfare implications. However, such effects hinge on reporting enforcement level and whether firm-level CSR costs exceed benefits.

Third, CSR reporting regulations present an interesting natural experiment to examine whether countries with poorer environmental and human rights reputation attract more socially responsible investment (SRI) funds. *Ex ante*, it is not clear how CSR reporting regulations affect SRI funds for countries with poorer environmental reputation. On the one hand, because CSR-conscious investors are motivated by both financial and

[46] Similarly, evidence from the SOX literature shows (1) smaller firms left from the US public equity market and (2) foreign firms avoided the US as preferred listing market (for a review of the SOX literature see Coates and Srinivasan 2014).

social returns, it is possible that they would consider negative profitability effects of CSR regulations albeit empirical evidence on profitability effects of CSR regulation is still inconclusive (Bhagawan and Mukhopadhyay 2018; Chen, Hung, and Wang 2018; Krüger 2015; Mukherjee, Bird, and Duppati 2018). On the other hand, however, CSR reporting regulations address and speak to concerns of CSR-conscious investors. Dyck et al. (2019) provide international evidence showing that socially responsible institutional investors drive CSR performance. Similarly, Riedl and Smeets (2017) find socially responsible investors are willing to earn lower returns on SRI funds than on conventional funds and pay higher management fees, suggesting these investors forgo financial returns to invest in accordance with their social preferences (also see also see also see also see Martin and Moser 2016). Effects of CSR reporting regulations on socially responsible investing funds of implementing countries represents an important area for further research.

Finally, there is limited evidence on whether and how CSR reporting regulations affect performance measurement systems and control designs of affected firms (Erkens, Paugam, and Stolowy 2015). Several studies show that CSR reporting regulations are associated with improved workplace safety (Chen, Hung, and Wang 2018; Christensen et al. 2017) and internal decision-making (Barth et al. 2017). However, little is known about what is driving these outcomes, and whether affected firms start incorporating CSR measures (e.g., workplace safety and emissions) into their performance measurement systems post the reporting regulations.

2.6 Conclusion

In this study, we evaluate the international CSR reporting regulations and find that the stated objectives of the reporting regulations considerably vary depending on the socio-economic development and institutional environment of the implementing countries. We

also find that most countries adopt a 'comply-or-explain' CSR reporting model, with assurance and reporting standards remaining voluntary.

Empirical research documents adverse capital-market reactions to important legislative events leading up to the CSR reporting regulations, consistent with investors and other capital-market participants perceiving CSR reporting regulations as costly. However, affected firms experience positive firm valuation outcomes over time, and the evidence suggests that the positive valuation outcomes stem from reductions in information asymmetry rather than improvements in operating performance. A growing number of empirical studies show that the CSR reporting regulations generate both positive and negative social externalities. Empirical research on improvements in reporting and disclosure quality is inconclusive. On balance, the net effects of CSR reporting regulations remain an open empirical challenge.

In closing, we note that the evidence on the effects of CSR reporting regulations is predominantly archival. We concur with other recent calls and emphasis on studies that rely on multiple research approaches including more experimentation, field studies and in-depth descriptive studies that feed empirical research on issues such as identification, theory-building and drawing causal inferences (Bloomfield, Nelson, and Soltes 2016; Chen and Schipper 2016; Erkens, Paugam, and Stolowy 2015; Gow, Larcker, and Reiss 2016). Combination of multiple research approaches is likely to help address some of the inconclusive findings from archival research and be informative to existing and potential policy issues.

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APPENDIX A – SUMMARY TABLES

Table 2. 1: Summary of international CSR reporting regulations

Country	Announcement Date	Effective Date	Affected Firms	Requirement	Regulatory Objective	Assurance /Audit	Penalties
EU	06-Dec-14	01-Jan-17	Large firms with 500 or more employees, and with either more than EUR 20 million of total assets or more than EUR 40 million of sales. Firms are required to prepare a non-financial statement containing information relating to environmental, social and employee-related matters, respect for human rights, anti-corruption and bribery matters.	Comply-or-Explain	The objective of the directive is "to increase relevance, consistency, and comparability of information disclosed by certain large undertakings and groups across the Union".	Statutory auditors and audit firms are required to check that the non-financial statement or the separate report has been provided.	No specific penalties are stated. Individual Member States shall ensure that effective national procedures are in place to enforce compliance.
UK	06-Aug-13	01-Oct -13	Section 414A of the Act requires all companies that are not small or micro-entities to prepare a Strategic Report.	Hybrid	The stated objective is to "inform members of the company and help them assess how the directors have performed their duty".	Voluntary	Non-compliance results in a fine to company officials not exceeding the statutory maximum.
Australia	01-Jul-14	30-Jun-15 3rd Edition	The Australian Securities Exchange (ASX) requires all listed firms to disclose "material exposure to economic, environmental and social sustainability risks", and how they manage or intend to manage those risks on a "comply or explain" basis.	Comply-or-Explain	To meet investors' demands for greater transparency on the environmental and social risks faced by listed entities, so that investors in turn can properly assess the risk of investing in those entities.	Voluntary	No specific penalties for non-compliance are stated.

Table 2.1 Continued							
Country	Announcement Date	Effective Date	Affected Firms	Requirement	Regulatory Objective	Assurance /Audit	Penalties
USA	08-Feb-10	08-Feb-10	The SEC released guidance regarding disclosure related to CSR, specifically climate change disclosures under Regulation S-K stating that firms are required to disclose "material" CSR matters. Section 1502, 1503 and 1504 of the Dodd-Frank Act in 2010 contain provisions that mandate CSR disclosure for certain US firms.	Mandatory when "material" Section 1502	No specific objective. The SEC (2016) seeks feedback for the question of "If we were to adopt specific disclosure requirements involving sustainability or public policy issues, how could our rules elicit meaningful disclosure on such issues?". The objective of Section 1502 is to curb human rights violations in Central Africa by forcing US firms to disclose whether they are sourcing their products in an ethical manner.	Voluntary Mandatory	No specific penalties are stated for firms that fail to disclose material CSR matters. However, firms are subject to fines if they fail to disclose material matters.
Japan	2004	01-Apr-05	Specified corporations and government agencies are required to publish an environmental report each financial year.	Mandatory	To "ensure appropriate business-related environmental conservation, thereby contributing to ensuring a healthy and cultured living for both the present and future generations of the nation".	Firms must take measures, either internally or externally, to enhance the reliability of the environmental report	A civil fine of up to 200,000 yen shall be imposed on executive officer(s) if a Specified Corporation fails to publish an environmental report
Canada	27-Oct-2010	27-Oct-10	The Canadian Securities Administrators (CSA) issued an *Environmental Reporting Guidance* for National Instrument (NI) 51-102 which requires listed firms to disclose "material" items in their continuous disclosure documents.	Comply-or-Explain	To assist issuers recognize effects of their performance on the environment, assess regulatory costs and address investors' demands for CSR information.	Voluntary	No specific penalties are stated for firms that fail to disclose material CSR matters.

Table 2.1 Continued							
Country	Announcement Date	Effective Date	Affected Firms	Requirement	Regulatory Objective	Assurance /Audit	Penalties
China	31-Dec-08	31-Dec-08	Listed firms on both Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE) are required to issue a standalone CSR report starting from fiscal year 2008.	Mandatory	The aim of the CSR reporting regulation is consistent with the Chinese government's recent attempts to control increasing levels of environmental pollution and "building a harmonious society".	Voluntary	Both exchanges explicitly state that firms will be delisted and publicly condemned if they fail to issue a separate CSR report
South Africa	01-Sep-09	01-Mar-10	Listed firms on Johannesburg Stock Exchange Limited (JSE) are required to issue integrated reports starting from fiscal year 2010. Before the integrated reporting mandate, sustainability reporting was mandatory since 2002.	Comply-and-Explain	CSR reporting requirements in South Africa are part of larger government policies intended to tackle social and economic inequalities following apartheid in South Africa.	Voluntary Note: Combined assurance is required	No specific penalties are stated in The King Code of Governance Principles.
India	29-Aug-13	29-Aug-13	Listed firms that meet certain size or profitability threshold must spend 2% of their average net income of the last three years on CSR issues. Non-spending firms must disclose why not. Affected firms must also publicly disclose an official CSR policy and report their CSR activities during the year in their annual reports.	Comply-or-Explain	The Ministry of Corporate Affairs specified a number of CSR areas in which affected firms should direct their CSR spending on including education, health care, poverty eradication, environment, arts, gender equality, reducing inequalities among other areas.	Voluntary	Failure to *explain* shall result in monetary fine on the company and its officers, with default company officers potentially facing up to three years in prison.

Table 2.1 Continued

Country	Announcement Date	Effective Date	Affected Firms	Requirement	Regulatory Objective	Assurance /Audit	Penalties
Malaysia	14-Dec-06 08-Oct-15	31-Dec-07 31-Dec-16 31-Dec-17 31-Dec-18	Listed firms on Bursa Malaysia are required to disclose their CSR activities or practices in the annual reports. If no CSR activities are undertaken, firms are required to provide a statement to that effect in their annual reports. CSR reporting requirements were amended in October 2015. Listed firms are now required to disclose a narrative sustainability statement of the management of material sustainability matters. The amendments take effect on a staggered basis over a period of 3 years, beginning from 31 December 2016 to 31 December 2018.	Comply-or-Explain Comply-or-Explain	The stated objective of these CSR reporting initiatives in Malaysia is to enhance the socio-economic status of Malaysian citizens.	Voluntary Voluntary	The Malaysian CSR reporting requirements do not state specific penalties for failure to disclose CSR matters.
Brazil	04-Jan-12	04-Jan-12	Listed firms on BM&F BOVESPA (B3) are required to issue a regular sustainability report or explain reasons of not issuing if they do not.	Comply-or-Explain	The objective is to develop and enhance Brazil's capital market by encouraging best practices in transparency and management of a range of different strategies. Firms are required to align their reporting to the Sustainable Development Goals (SDG).	Voluntary	No specific penalties for non-compliance are stated.
Indonesia	04-04-12	31-Dec-12	Listed firms are required to report CSR matters, specifically environmental and social performance.	Mandatory	To ensure firms participate in the sustainable economic development, in order to increase the quality of life and environment, which will be valuable for the Company itself, the local community, and the society in general.	Voluntary	Firms that fail to comply with the regulation shall be imposed with sanction in accordance with applicable regulations.

Table 2.1 Continued							
Country	Announcement Date	Effective Date	Affected Firms	Requirement	Regulatory Objective	Assurance /Audit	Penalties
Thailand	12-Dec-13	01-Jan-14	Listed firms on Stock Exchange of Thailand (SET) are required to disclose their CSR policies and activities in their annual reports or in a separate sustainability report.	Mandatory	The objective of CSR reporting mandate is to monitor and control human trafficking, grow sustainable fishery, and curb corruption. The mandate is motivated by national efforts to attract foreign direct investment.	Voluntary	No specific penalties for non-compliance are stated.
Taiwan	20-Oct-15	31-Dec-16	Listed firms with common stock equal to or greater than NT$5 billion are required to issue CSR reports. Firms in the food, financial, and chemical industries, as well as listed firms where food and beverage sales account for more than 50% of total annual revenue are required to file CSR reports.	Mandatory	The aim is to improve reporting standards and attract more investors looking for sustainable investment opportunities.	Voluntary	No specific penalties for non-compliance are stated.
Hong Kong	31-Dec-15	01-Jan-16 01-Jan-17	Listed firms are required to publish an ESG report on an annual basis. The mandate is organized into two ESG subject areas (i.e., Environmental and Social). These requirements take effect on a staggered basis over a 2 year period, beginning from 1 January 2016 to 1 January December 2017.	Comply-or-Explain	The mandate states that the longer term goal of the regulation is achieve better and more comprehensive ESG reporting amongst issuers in Hong Kong.	Voluntary	No specific penalties for non-compliance are stated.
Singapore	20-Jul-16	31-Dec-17	Listed firms are required to prepare a sustainability report, which must describe the issuer's sustainability practices including a sustainability policy, material matters, targets in the future and board's responsibility.	Comply-or-Explain	To meet an increased demand of investors for financial reports to be supplemented by descriptive and quantitative information on how business is conducted and the sustainability of the current business into the future.	Voluntary	No specific penalties for non-compliance are stated.

Table 2.1 Continued

Country	Announcement Date	Effective Date	Affected Firms	Requirement	Regulatory Objective	Assurance /Audit	Penalties
Philippine	15-Feb-19	8 Mar-19	the Securities and Exchange Commission (SEC) requires public listed companies to issue a sustainability report together with their annual report.	Comply-or-Explain	The aim is to ensure firms identify, evaluate, and manage their material Economic, Environmental and Social risks and opportunities	Voluntary	No specific penalties for non-compliance are stated.

Notes: Table 2.1 summarizes CSR reporting regulation developments worldwide and focuses on jurisdictions where there is a specific CSR reporting mandate for public listed firms. The table presents details on the adopting country / region, announcement date, effective date(s), affected firms, requirement type, regulatory objective, assurance/ audit requirement and potential penalties for non-compliance.

Table 2. 2: Empirical evidence on reporting quality effects of CSR reporting regulations

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Ioannou and Serafeim (2017)	China Denmark Malaysia South Africa Controls: Worldwide & US firms	5,072 Affected firm-years 5,072 firm-years	2005-2012	• CSR disclosure level • Voluntary adoption of GRI	Mandatory CSR reporting firms significantly increased CSR disclosure level, increased voluntary assurance of CSR disclosure and increased likelihood adoption of voluntary reporting guidelines (i.e., GRI).	Yes
Hummel and Rötzel (2019)	UK Control: US firms	1,242 Affected firm-years 1,175 control firm-years	2010-2015	• CSR disclosure level • Narrative disclosure level	Results show a significant increase in the level of mandated disclosures and narrative disclosures of affected firms relative to control firms after the disclosure mandate. This effect is less pronounced for firms with higher reporting incentives, suggesting that reporting incentives mitigate effects of CSR reporting mandates on increasing disclosure.	Yes
Haji (2013)	Malaysia	170 firm-years	2006, 2009	• CSR disclosure level • CSR disclosure quality	Firms significantly increased CSR disclosure quantity and quality following CSR reporting regulation. Corporate governance attributes drive increased quality in CSR disclosure.	Yes
Marquis and Qian (2013)	China	5,660 firm-years	2006-2009	• Issuance of CSR reports • Quality of CSR reports	Affected firms increased issuing CSR reports over time. However, the quality (substance) of CSR reports did not increase over time - indicating firms respond symbolically to the regulation.	Yes (contingent)

Table 2.2 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Stolowy and Paugam (2018)	South Africa USA Europe Firms in Dow Jones Sustainability Index (DJSI)	30 firm-years 5,007 firm-years (S&P 500 index) 5,500 firm-years EuroStoxx 600 firms	2006, 2011 & 2016 2002-2015 2002-2015	• CSR/ non-financial disclosure level	Firms in South Africa significantly increased amount of CSR disclosures over time. The percentage of firms publishing CSR reports significantly increased both in the US and Europe, from 5% in 2006 to 77% in 2015. Percentage of firms reporting CSR significantly increased from 13% to 47% in 2007 after the publication of GRI guidelines. There is considerable heterogeneity in CSR reporting practices among global firms in the DJSI. Overall, results indicate reporting guidelines drive growth in CSR reporting.	Yes (contingent)
Solomon and Maroun (2012)	South Africa	20 firm-years	2009, 2011	• Disclosure level • Disclosure quality	Sample firms significantly increased *amount*, but not the *quality*, of CSR disclosures after the integrated reporting mandate in South Africa.	No
Setia et al. (2015)	South Africa	50 firm-years	2010, 2012	• Disclosure level • Disclosure quality	Firms significantly increased *amount*, but not the *quality*, of CSR disclosures after the integrated reporting mandate.	No
Haji and Anifowose (2016a)	South Africa	246 firm-years	2011-2013	• CSR disclosure level • Disclosure quality	Firms significantly increased *amount*, but not the *quality*, of CSR disclosures after the integrated reporting mandate.	No
Dong and Xu (2016)	China	360 firm-years	2007-2012	• CSR disclosure level • CSR disclosure quality	This study focused on mining firms listed on SSE and SZSE and finds that amount, but not the quality, of CSR disclosures significantly increased over time. Membership of social responsibility index and cross-listing overseas are associated with more disclosures.	No

Table 2.2 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Islam and van Staden (2018)	USA	133 firms	2014	• Comprehensiveness of mineral disclosures	Collaboration with NGO increases disclosure level. Activist protests also increase disclosure level. The effect of NGO collaboration on the comprehensiveness of mineral disclosures is higher when there are activist protests.	Yes (contingent)
Birkey et al. (2018)	USA	105 firms	2012	• CSR Disclosure level • CSR Disclosure quality	A significant number of firms provided disclosures in response to the disclosure mandate. However, the disclosures tended to be symbolic rather than substantive.	No
Dalla Via and Perego (2018)	USA Focuses on the passage of Section 1502 of the Dodd-Frank Act	122 firms	2015	• Disclosure level • Determinants of disclosure	Results show a considerable variation among disclosing firms' adherence to the disclosure mandate. Firms with long-term oriented managerial incentives, more frequent board meetings, strong governance systems and inclusion in a sustainability index are associated with higher levels of conflict mineral disclosures.	No
Wang et al. (2017)	China	1,830 firm-years	2009-2012	• CSR disclosure quality	CSR disclosure quality increased after the reporting regulation. The effect is more pronounced among larger and more profitable firms, but is less pronounced for firms controlled by the government.	Yes
Perera, et al. (2019)	Australia	385 Affected firm-years 150 control firm years	2007, 2009-2011	• CSR disclosure level	CSR disclosure level increased for affected firms relative to control firms after the Act. The increase in disclosure level is larger for firms with higher levels of carbon emissions, consistent with firms using more disclosures to address public concern relating to higher levels of emissions.	Yes (contingent)

Table 2.2 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Kim and Davis (2016)	USA	1,300 firm-years	2014-2015	• CSR disclosure quality	Results show that nearly 80% of the sample companies admitted that they were unable to determine whether their products are free from conflict minerals, with only 1% of the companies declaring that their products are not sourced from conflict minerals with certainty beyond reasonable doubt. More complex firms and firms with larger supply chains provided more uncertain (i.e., symbolic) disclosures.	No
Wang et al (2019)	South Africa	356 firm-years	2012-2015	• Reporting quality • Credibility enhancing mechanisms (CEM)	Results show a significant increase in integrated reporting quality over time. Both the extent and quality of CEMs have also increased over time. In addition, corporate governance mechanisms (e.g., the board and audit committee) are positively associated with both reporting quality and CEMs.	Yes (contingent)
Haji and Anifowose (2016b)	South Africa	246 firm-years	2011-2013	• Reporting quality	Results show a significant increase in integrated reporting quality over time. Audit committee effectiveness is positively associated with the increase in reporting quality.	Yes (contingent)
Mion and Loza Adaui (2019)	Italy Germany	132 total firm-years	2016-2017	• CSR disclosure quality • CSR disclosure Comparability	Results show an increase in the quality of CSR disclosures of both firms listed in Italy and Germany. Results also show comparability of CSR reports across the two countries improved after the EU's disclosure directive.	Yes
Dumay and Hossain (2019)	Australia	97 firms	2015	• Disclosure level • Disclosure substance	Results show a high level of disclosures but the disclosure quality is low.	No

Table 2.2 Continued						
Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Luque-Vílchez, and Larrinaga (2016)	Spain	824 firm-years	2010-2013	• Number of CSR reports issued • CSR disclosure quality	Results show a decrease in the number of affected companies publishing CSR reports in Spain after a CSR reporting regulation in 2011. Disclosure quality also remains low. However, results indicate a modest increase in the quality of disclosures over time.	No
Larrinaga et al. (2018)	Spain	240 firm-years	2010-2013	• Number of CSR reports issued • CSR disclosure quality	Results show an increase in the number of public sector organizations (PSO) issuing CSR reports after the CSR reporting regulation in Spain. However, CSR disclosure quality decreased after the reporting regulation.	No
Peña and Jorge (2019)	Spain	147 firms	2014-2015	• Number of CSR reports issued • CSR disclosure level	Results show 33 out of 147 PSO issued CSR reports. Results also indicate a low level of disclosures.	No
Chauvey et al. (2015)	France	162 firm-years	2004, 2010	• CSR disclosure level • CSR disclosure quality • Informational quality	Results show a significant increase in CSR disclosure level and quality. However, informational quality (e.g., comparability, relevance) remains low after the reporting regulation. Further, extent of negative disclosures decreased over time.	Yes (contingent)
Chelli et al. (2018)	France Canada	200 firm-years 140 firm-years	2001-2003; 2007-2013 2003-2005; 2010-2013	• CSR disclosure level • CSR disclosure quality	CSR disclosure level significantly for French firms but not for Canadian firms. Also compliance and disclosure quality are significantly higher in France than Canada. However, disclosure quality in both countries is low.	Yes (contingent)

Table 2.2 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Schwartz (2016)	USA	1,319	2014	• Compliance to Section 1502 • CSR disclosure quality	Results show that only 1,319 firms filed Form SD compared to the SEC's estimate of 5,994 firms. Of the 1,319 Form SD filing firms, only 1,020 firms supplemented conflict mineral reports. The study concludes that the disclosure filings lacked quality and substance.	No

Notes: Table 2.2 summarizes empirical studies on reporting and disclosure quality effects of CSR reporting mandates. The table provides details on the sample, outcome variables, key findings and whether the specific study's results are consistent (inconsistent) with the objectives of the CSR reporting regulation. If the effects of the CSR reporting mandate are confined to a subset of firms, we conclude that the results are contingently consistent with the objectives of CSR reporting regulation (Brüggemann, Hitz and Sellhorn 2013).

Table 2. 3: Empirical evidence on the impact CSR reporting regulations on assurance

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Ioannou and Serafeim (2017)	China Denmark Malaysia South Africa Controls: Worldwide & US firms	5,072 Affected firm-years 5,072 firm-years	2005-2012	• CSR disclosure assurance	CSR disclosure assurance increases for mandatory CSR reporting firms relative to control firms after the CSR reporting regulations.	Yes
Ackers and Eccles (2015)	South Africa	576 firm-years	2008; 2011-2012	• CSR disclosure assurance	CSR assurance increases after the 'comply-or-explain' assurance requirement in South Africa from 9% in 2008 (pre-regulation) to 26% in 2012. This uptake is more visible in larger and environmentally sensitive firms.	Yes (contingent)
Ackers (2017)	South Africa	800 firm-years	2007-2014	• CSR disclosure assurance	CSR assurance increase over time from 14% in 2007 to 36% in 2014. Despite the increase, majority of the sample firms (i.e., 64%) does not obtain CSR disclosure assurance and choose the 'explain' feature of the 'comply-or-explain' regime. Further, larger and environmentally sensitive firms are more likely to obtain CSR disclosure assurance, indicating CSR assurance is driven by industry and firm-specific factors.	Yes (contingent)
Zhou et al. (2019)	South Africa	564 firm-years	2009-2015	• Assurance • Analysts forecast errors • Forecast dispersion • Information asymmetry	Combined assurance provisions in South Africa increases over time. Results also indicate combined assurance is associated with several capital-market benefits including reduction in analyst forecast errors and dispersion as well as information asymmetry.	Yes

Table 2.3 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Maroun (2019)	South Africa	294 firm-years	2010-2016	• CSR disclosure assurance • Reporting quality	CSR disclosure assurance increases from 38% in 2010 to 54% in 2016. The number of CSR disclosure items externally assured is associated with higher disclosure quality, regardless of whether reasonable or limited assurance is obtained. Further, reporting quality is higher when assurance is provided by Big4 audit than smaller audit firms.	Yes (contingent)

Notes: Table 2.3 summarizes empirical studies on the impact of CSR reporting regulations on CSR disclosure assurance. The table provides details on the sample, outcome variables, key findings and whether the specific study's results are consistent (inconsistent) with the objectives of the CSR reporting regulation. If the effects of the CSR reporting regulation are confined to a subset of firms, we conclude that the results are contingently consistent with the objectives of CSR reporting regulation.

Table 2. 4: Event studies on capital-market reactions to CSR reporting regulations

Study	Number of countries	Sample	Fiscal year(s)	Outcome variable(s)	Key findings	Consistent with the objectives of Reg.?
Manchiraju and Rajgopal (2017)	India	5,889 Affected firm-years 4,032 Control firm-years	2009-2013	• CAR • Tobin's Q	CAR and Tobin's Q of affected firms significantly decline around events associated with CSR regulation. Firm value effects of the CSR rule is less negative for firms that engage in advertising.	No
Chen et al (2018)	China	1674 Affected firm-years 5278 Controls	2006-2011	• CAR	CAR of affected firms significantly declines around events associated with CSR reporting regulation.	No
Grewal et al (2019)	EU	1,249 Affected firm-years 1,249 Control firm-years	2013-2014	• CAR	CAR of affected firms significantly declines around events associated with CSR reporting directive (i.e., (an average decline of \$79M in market value). The negative effects are concentrated for firms with weak pre-regulation CSR disclosure and performance. Results also show that firms with stronger pre-regulation CSR records enjoy a positive CAR.	No
Hombach and Sellhorn (2019)	USA	67 firms	2010-2015	• CAR	CAR of affected firms significantly declines around 12 events associated with the passage of Section 1504. The negative effect is stronger for firms that face greater reputational risk, consistent with these firms facing higher exposure to potential adverse capital-market reactions.	No
Healy and Serafeim (2020)	International data	31 firms	2006-2014	• CAR • Extractive payment disclosure	CAR of affected firms declines around four events leading up to the passage of Section 1504. Results also show firms' voluntary disclosure of extractive payments to host governments before the disclosure mandate is very rare.	No

Table 2.4 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variable(s)	Key findings	Consistent with the objectives of Reg.?
Elayan et al. (2019)	USA	3,639 firm-years	2008-2014	• CAR	CAR significantly declines around events associated with Section 1502. The negative effect is larger for firms relying on conflict minerals. Results also show a negative market reaction to initial conflict mineral disclosures for filing firms.	No
Sankara et al. (2019)	USA	797		• CAR	CAR of Form SD-filing firms declines at their filing date. Further analyses based on a sub-sample of firms issuing conflict minerals reports show that the negative capital-market reaction is less pronounced for firms with more extensive disclosures.	No
Griffin et al. (2014)	USA	103 filing firm-years 103 non-filing firms	2010-2012	• CAR	CAR of filing firms declines following initial conflict mineral disclosures. Results also show industry and size-matched control firms experience negative firm value effects, consistent with investors using the available information to assess the valuation of non-disclosing firms.	No
Birkey et al. (2018)	USA	105		• CAR	Based on to two events associated with the passage of disclosure mandate in California, results show the CAR of affected firms declines both for individual and combined events following the disclosure mandate. The negative firm value effects are stronger for firms facing higher regulatory cost exposures.	No
Wang and Li (2016)	China	411 CSR firm-years 5,127 non-CSR firm-years	2007-2012	• CAR	CAR of CSR-reporting firms is higher relative to non-CSR reporting firms. However, when sample is partitioned into mandatory and non-mandatory CSR firms, results show no significant differences between the firm value of voluntary and mandatory CSR disclosures.	Yes (contingent)

Table 2.4 Continued						
Study	Number of countries	Sample	Fiscal year(s)	Outcome variable(s)	Key findings	Consistent with the objectives of Reg.?
Cousins et al. (2018)	UK	205	2012-2015	• CAR	No evidence of CAR changes for the combined events or individual event date. However, there is a positive stock market reaction on the first trading day when the stock market learned about the UK Government's plans to tackle modern slavery through legislative action. The positive effect is stronger for firms with a lower risk of modern slavery in their business chain. Results are unaffected by a firm's CSR disclosure levels nor a firm's overall disclosure quality.	Yes (contingent)

Notes: Table 2.4 summarizes event studies on capital-market reactions to CSR reporting regulations. The table provides details on the sample, outcome variables, key findings and whether the specific study's results are consistent or inconsistent with the stated objectives of the relevant CSR reporting regulation. If the effects of the CSR reporting regulations are confined to a subset of firms, we conclude that the results are contingently consistent with the objectives of CSR reporting regulation (Brüggemann, Hitz and Sellhorn 2013).

Table 2. 5: Empirical evidence on direct economic consequences of CSR reporting regulations

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Krüger (2015)	UK	2,709 Affected UK firm-years 2,646 Control EU firm-years	2008-2014	• Tobin's Q • Liquidity • Bid-ask spreads • Investment • R&D, • ROA	Firm value and liquidity of affected firms increases relative to European control firms after the UK's disclosure regulation. Information asymmetry also decreases after the reporting regulation. However, no evidence of investment, R&D and ROA effects, consistent with the regulation having capital-market rather than real effects.	Yes
Bhagawan and Mukhopadhyay (2018)	India	669 Affected firm-years 781 Control firm-years	2006-2016	• Tobin's Q • ROA	Firm value (Tobin's Q) and profitability (ROA) of affected firms are significantly higher relative to control firms.	Yes
Ioannou and Serafeim (2017)	China Denmark Malaysia South Africa Controls: Worldwide & US firms	5,072 Affected firm-years 5,072 firm-years	2005-2012	• Tobin's Q	Firm value increases for affected firms relative to control firms after the reporting regulations. The increase in firm value is driven by increases in CSR disclosures.	Yes
Baboukardos (2017)	UK	742 firm-years	2011-2014	• Firm value	CSR disclosures (i.e., emissions) are negatively associated with firm value for the full-sample period. However, the magnitude of the negative effects of carbon emissions on firm value decreased after the CSR reporting regulation in the UK, and the decrease is larger for firms in energy-intensive industries, consistent with the regulation forestalling investors' negative perceptions of emissions disclosure.	Yes (contingent)

Table 2.5 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Tang and Zhong (2019)	International	193,714 firm-years	2000-2016	• Stock price crash risk	Probability of stock price crash risk significantly declines for affected firms in countries that implement CSR disclosure regulations. The decrease is larger for less transparent firms before the regulations.	Yes
Lee and Yeo (2016)	South Africa	822 firm-years	2010-2013	• Tobin's Q • Stock return • ROA	Integrated reporting quality is associated with increased firm value and firm performance (return and ROA). The effects are stronger for firms with higher organizational complexity and firms with external financing needs.	Yes (contingent)
Barth et al. (2017)	South Africa	320 firm-years	2011-2014	• Liquidity • Cost of capital • Future cash flow	Integrated reporting quality is associated with increased liquidity and expected future cash flows but does not affect cost of capital.	Yes (contingent)
Caglio et al. (2020)	South Africa	443 firm-years	2011–2016	• Tobin's Q • Bid-ask spreads • CSR controversy	Integrated reporting readability and conciseness are respectively associated with positive firm valuation and increased liquidity. Textual characteristics of integrated reports also affect CSR reputation scores of firms.	Yes (contingent)
Zhou et al. (2017)	South Africa	443 firm-years	2009-2012	• Cost of capital • Stock return	Integrated reporting quality is associated with lower cost of equity capital, and lower stock returns consistent with investors accepting lower returns for firms with better information environment. Reduction in cost of capital is larger for firms with a fewer analyst following.	Yes (contingent)
Hung et al. (2013)	China	6,469 firm-years Treated firms 1,367 Control firms 5,102	2006-2010	• Information asymmetry	Affected firms experience a decrease in information asymmetry following the CSR regulation in China. The decrease is stronger for firms with greater political or social risks, poorer information environments, and better CSR reporting quality. Unaffected firms voluntarily release CSR reports on or after the CSR reporting mandate, suggesting possible network effects.	Yes

Table 2.5 Continued						
Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Kajueter et al. (2019)	EU	327 Affected firms 545 Control firms	2017	• Liquidity	No overall liquidity effects after the CSR disclosure directive in the EU for the full sample. Further analyses show that firms in weaker institutional environments and few prior CSR disclosure regulations experience small but significant liquidity benefits. However, the CSR directive does not provide incremental liquidity benefits for firms in stronger institutional environments.	Yes (contingent)
Xu et al. (2019)	China	1,893 Affected firm-years 11,620 Control firm-years	2005-2012	• Cost of debt	Cost of debt decreases for affected firms relative to control firms after the CSR reporting regulation. Affected firms also have more access to long-term debt. Further analyses show that the decrease in cost of debt is stronger among firms with higher CSR scores, longer CSR reports, political connections and firms that follow Global Reporting Initiative (GRI) guidelines.	Yes
Gong et al. (2018)	China	344 Bonds	2010-2013	• Cost of debt	High CSR disclosure quality is associated with lower costs of corporate bonds, and more for voluntary than mandatory CSR reporting firms.	No
Lemma et al. (2019)	South Africa	832 firm-years	2009-2015	• Leverage	Integrated reporting is associated with lower (higher) levels of debt (equity) financing, suggesting that integrating reporting may be driven by a firm's financing needs.	No
Chen et al (2018)	China	1674 Affected firm-years 5278 Control firm-years	2006-2011	• ROA • ROE	CSR reporting mandate is associated with significant decreases in firm profitability (ROA and ROE) of affected firms by 26% and 20% relative to control firms. These results are mainly driven by political/social factors rather economic factors.	Yes (contingent)

Table 2.5 Continued						
Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Mukherjee et al. (2018)	India	Total 4,256	2008-2015	• ROE	Results show that firm profitability (ROE) of affected firms significantly decreases after the CSR mandate in India relative to control firms. The decrease in ROE is stronger for firms that previously did not spend on CSR activities. Results also show an overall decrease in CSR spending, with large affected firms reducing their CSR spending after the CSR mandate.	No

Notes: Table 2.5 summarizes direct empirical studies on economic consequence of CSR reporting regulations. The table provides details on the sample, outcome variables, key findings and whether the specific study's results are consistent or inconsistent with the stated objectives of the relevant CSR reporting regulation. If the effects of the CSR reporting mandate are confined to a subset of firms, we conclude that the results are contingently consistent with the objectives of CSR reporting regulation (Brüggemann, Hitz and Sellhorn 2013).

Table 2. 6: Indirect empirical evidence on capital-market effects of CSR reporting regulations

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Wang et al. (2018)	China	11,619 firm-years	2003–2012	• Earnings management (discretionary accruals)	Affect firms significantly constrain earnings management following the CSR reporting regulation. This effect is stronger for firms with poor information environments (i.e., firms with lower analyst coverage), consistent with the regulation reducing information asymmetry.	Yes
Baboukardos and Rimmel (2016)	South Africa	954 firm-years	2008-2013	• Valuation relevance of accounting information	Results show an increase in the earnings valuation coefficient (EPS), consistent with integrated reporting improving the valuation relevance of accounting information. However, inconsistent with the expectations of integrated reporting, results show a decrease in the value relevance of net assets (BVS).	Yes (contingent)
Bernardi and Stark (2018a)	South Africa	205 firms	2008- 2012	• Analyst forecast accuracy	Results show the association between CSR disclosures and analyst forecast accuracy improves after, not before, the integrated reporting mandate. These results do not persist for financial firms, suggesting that investors put greater weight on CSR disclosures of non-financial firms relative to financial firms.	Yes (contingent)
Bernardi and Stark (2018b)	UK	690	2008- 2012	• CSR disclosure level • Analyst following	Results show positive *between firm* relationships between the levels of CSR disclosures and the level of analyst following, suggesting CSR disclosures are value relevant to analysts.	Yes
Zhou et al. (2017)	South Africa	443 firm-years	2009-2012	• Analyst forecast accuracy	Integrated reporting quality is associated with improved analyst forecast accuracy.	Yes (contingent)
Caglio et al. (2020)	South Africa	443 firm-years	2011–2016	• Analyst forecast accuracy	Integrated reporting tone bias is associated with less dispersed analysts' estimates. Assured integrated reports are also associated with lower analysts forecast dispersion, consistent with assurance increasing credibility of CSR information.	Yes (contingent)

Table 2.6 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Cheng and Kung (2016)	China	4,367 firm-years	2007-2009	• Accounting conservatism • Earnings management	CSR reporting regulation in China constrains accounting conservatism and earnings management. However, the effects are less significant for stated owned firms.	Yes (contingent)
Nair et al. (2019)	India	363 firm-years	2014-2017	• Earnings management	Results indicate a decrease in earnings management in India after the CSR reporting regulation. The decrease is stronger (weaker) for firms with retail (institutional) investors, consistent with the CSR disclosure regulation enhancing the information environment for retail investors.	Yes
Tlili et al. (2019)	South Africa	885 firm-years	2006-2015	• Market value	Results show value relevance of organizational capital significantly increased after the implementation of the integrated reporting mandate in South Africa.	Yes

Notes: Table 2.6 summarizes empirical studies that indirectly assess economic consequences by examining effects of CSR reporting mandates on information environment. The table provides details on the sample, outcome variables, key findings and whether the specific study's results are consistent or inconsistent with the stated objectives of the relevant CSR reporting regulation. If the effects of the CSR reporting mandate are confined to a subset of firms, we conclude that the results are contingently consistent with the objectives of CSR reporting regulation (Brüggemann, Hitz and Sellhorn 2013).

Table 2. 7: Empirical evidence on real effects of CSR reporting regulations

Evidence on CSR performance and spending						
Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Fiechter et al. (2019)	EU firms	3,335 Affected firm-years (EU) 6,850 Control firm-years (US)	2011-2015	• CSR scores	CSR scores of affected firms that previously did not issue voluntary CSR reports significantly increased after the EU CSR Directive. Further, the increase is stronger for firms with previously low levels of CSR scores, and for firms with higher exposure to potential adverse stakeholder reactions.	Yes
Jackson et al. (2020)	24 countries	19,709 firm-years	2002-2014	• CSR scores • Irresponsible scores	Firms in countries with mandatory CSR reporting engage significantly more CSR activities. This effect is stronger for firms with low levels of CSR activities pre-regulation. However, corporate irresponsibility does not decline for mandatory CSR firms.	Yes (contingent)
Gao et al. (2016)	Netherlands	491 firm-years	2004-2012	• CSR performance	CSR performance of sample firms significantly improved after the initiation of Transparency Benchmark program in the Netherlands. Results also show CSR disclosure quality is positively associated with CSR performance which in turn lead to positive capital-market benefits including greater analyst coverage, higher levels of institutional ownership, and greater stock liquidity.	Yes
Grewal et al. (2019)	EU	Un-tabulated	2013-2016	• CSR scores (performance) • CSR scores (disclosure)	Firms with weak pre-regulation CSR disclosure (performance) scores strengthen their CSR disclosure (performance) in anticipation of the Directive by 10% (20%), *versus* just 4% (1%) for firms having high pre-regulation CSR disclosure (performance) scores.	Yes

Table 2.7 Continued						
Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Dharmapala and Khanna (2018)	India	13,770 firm-years	2012–2015	• CSR spending	CSR spending of affected firms significantly increased after the regulation in India. Based on subsample analysis of top 100 firms, results show that firms initially spending less (more) than 2% of their profits on CSR issues increased (decreased) their CSR spending.	Yes (contingent)
Boodoo (2016)	India	7,302 firm-years	2010-2013	• CSR scores	CSR scores of affected firms improved after the CSR regulation in India relative to a control group of US firms.	Yes
Marques and Srinivasan (2018)	India	798 firm-years	2015-2016	• CSR spending	Results show an overall increase in CSR spending over time in India. However, a substantial number of firms spend less than the amount specified in the mandate. Results also show firms in business groups have higher likelihood of spending only the required value, indicating group policies for CSR spending.	Yes (contingent)
Bansal et al. (2019)	India	165,971 firm-years	2010-2016	• CSR spending • CSR disclosure	Results show an increase in CSR disclosures and spending of affected firms after the regulation. However, larger firms decreased their CSR spending to about the required levels after the regulation.	Yes (contingent)
Chen et al. (2018)	China	1,199 firm-years	2006-2011	• Employee fatalities	Results show a significant decrease in workplace fatalities (i.e., employee deaths) of affected firms relative to control firms after the CSR disclosure regulation in China, consistent with the CSR regulation improving workplace safety and thus creating positive externalities.	Yes
Christensen et al. (2017)	USA	26, 259 total firms Treated firms 2,726 Control firms 23,533	2002-2013	• Mining citations • Injuries • Labor productivity	Disclosing safety records in financial reports led 11% decrease in mining-related citations and 13% decrease in injuries for affected firms relative to control firms. However, results show a decline in labor productivity of affected mining firms, indicating a tradeoff between safety and productivity.	Yes (contingent)

Table 2.7 Continued

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Liu and Tian (2019)	China	5,361 total firm-years Treated firm-years 2,298 Control firm-years 3,063	2004-2013	• Investment efficiency	Results show an increase in investment efficiency via reduction in overinvestment of affected firms relative to control firms, consistent with CSR reporting regulations strengthening monitoring and corporate governance mechanisms	Yes
Barth et al. (2017)	South Africa	320 firm-years	2011-2014	• Expected future cash flows (investment efficiency)	Results show a positive association between integrated reporting quality and expected future cash flows. Disentangling two possible channels in which this association occurs: a capital-market effect (i.e.., better investor cash flow forecasts) and/or a real effect channel (i.e., better internal decisions), results show higher integrated reporting quality is associated with higher investment efficiency, but not with higher realized future operating cash flows, suggesting real effects of integrated reporting mandate.	Yes (contingent)
Ni and Zhang (2019)	China	8,228 firm-years Affected firms 1,762 Control firms 6,466	2006-2011	• Dividend payouts	Dividend payouts of affected firms significantly decreases after the CSR reporting mandate relative to control firms. The decrease in dividend payouts is more pronounced for firms with weaker corporate governance mechanisms.	No

Table 2.7 Continued

Evidence on carbon emissions

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Gramlich and Huang (2017)	China	477 Affected firm-years 274 Control firm-years	2005-2013	• Environmental impact ratio (IR)	Both direct and indirect environmental impact of affected firms significantly decreases relative to control firms after CSR reporting regulation. Reduction in pollution levels is larger among affected firms in environmentally sensitive industries than in service firms.	Yes
Chen et al. (2018)	China	Impacted city-years 626 Other city-years 573	2006-2011	• Industrial wastewater discharge • SO_2 emission levels	Cities most affected by the CSR reporting regulation enjoy a greater decrease in their industrial wastewater and SO_2 emission levels, with a city-level decrease of 28% (24%) in industrial wastewater discharge (SO_2 emission) after the CSR reporting mandate.	Yes
Downar et al. (2019)	UK	1,071 Affected firm-years 2,862 Control firm-years	2008-2016	Carbon emissions	Results show a significant decrease in carbon emissions of affected firms for up to 18% after the disclosure regulation in the UK relative to control firms. Emission reductions occur across all industries but are more pronounced for firms in the energy industry.	Yes
Jouvenot and Krueger (2019)	UK	163 Affected firms (UK) 356 Control firms (EU)	2009-2016	Carbon emissions	Results show a significant 15% decrease in carbon emissions of UK firms after the disclosure regulation relative to a control group of European firms. The decrease is larger for firms with high levels of tangible assets.	Yes
Tomar (2019)	USA	13009 Affected firm-years (USA) 1578 Control firm-years (Canada)	2010-2013	Carbon emissions	Results show a 7% decrease in emissions after the disclosure regulation, and reductions in emissions are larger for facilities with more disclosing peers nearby consistent with benchmarking-learning hypothesis. Results also show that within-industry emissions dispersion declines, indicating greater overlap in US facilities' information sets after the disclosure program.	Yes

Table 2.7 Continued

Evidence on the unintended consequences CSR reporting regulations

Study	Number of countries	Sample	Fiscal year(s)	Outcome variables	Key findings	Consistent with the objectives of Reg.?
Rauter (2019)	13 host countries	8,096 firm-years	2010-2017	• Extractive payment • Payment gap • Segment investments	Results show an increase in extractive payments of affected firms to host governments relative to control firms after the disclosure mandate. Results also show decrease in capital expenditures of affected firms relative to control firms after the mandate. However, no effect of the mandate on extractive payment gaps, a proxy for corruption in host countries.	Yes (contingent)
Parker et al. (2016)	Democratic Republic of the Congo	7,697 infants	2007-2012	• Infant mortality	Results show a significant increase in infant deaths in villages near the policy-targeted mines. Infant deaths increased by at least 143 percent. Results indicate that mothers' consumption of infant health care goods and services decreased following the passage of the legislation, consistent with the Act imposing a de facto embargo on Congo.	No
Parker and Vadheim (2017)	Democratic Republic of the Congo	7,560 observations	2004–2012	• Looting • Battles	Results show violence in Congo increased after the passage of Section 1502. Looting of civilians increased and militia battles shifted toward unregulated gold-mining territories.	No
Emerson (2017)	All African countries with data	Data varies depending on outcome variables	2006-2015	• GDP growth • US foreign direct investment in Africa/ DRC • Deaths by armed violent conflict in DRC	Results indicate GDP per capita and US Foreign Direct Investment in Congo and other affected countries have decreased after Section 1502. Deaths by violent conflicts have increased per year after congress and the SEC enacted the legislation.	No

Notes: Table 2.7 summarizes empirical studies on real effects of CSR reporting regulations. The table provides details on the sample, outcome variables, key findings and whether the specific study's results are consistent or inconsistent with the stated objectives of the CSR reporting regulation. If the effects of the CSR reporting mandate are confined to a subset of firms, we conclude that the results are contingently consistent with the objectives of CSR reporting regulation (Brüggemann, Hitz and Sellhorn 2013).

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CHAPTER 3 – STUDY TWO

AUTHORSHIP DETAILS

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Overall Percentage (%)	100		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
Signature		Date	25 March 2020

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate in include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Does "Comply-or-Explain" Disclosure Regulation Constrain the Delay of Bad News Disclosures?

Abstract

Several countries have recently passed disclosure regulations that contain "comply-or-explain" clauses. In this study, I experimentally examine whether comply-or-explain disclosure regulation affects managers' disclosure recommendations of a probable negative event affecting the firm's underlying economics. I also consider whether the impact of comply-or-explain regulation is moderated by the firm's prior disclosure policy (known to be biased toward no disclosure *versus* unknown). Drawing on motivated reasoning theory with insights from reason writing literature in psychology and legal research, I predict and find that managers are more likely to make disclosure of a negative event in a comply-or-explain regulatory system relative to a voluntary regime. I also find that the impact of comply-or-explain regulation on managers' disclosure judgements is larger when the firm's prior disclosure policy is unknown than when it is known to be biased toward no disclosure. In addition, mediation analyses suggest that comply-or-explain regulatory system increases managers' perceived accountability which in turn drives their disclosure recommendations. I discuss the implications of these results for global regulators, board of directors, and investors.

Keywords: Disclosure; Comply-or-Explain Regulation; Disclosure Policy;

Accountability

3.1 Introduction

In recent years, an increasing number of countries have passed disclosure regulations that contain "comply-or-explain" provisions. The comply-or-explain regulatory system was first introduced in the UK's Cadbury Report of Corporate Governance in 1992, and is since increasingly adopted as an alternative disclosure regulation to voluntary or mandatory disclosure requirements (Ho 2017; Zadkovich 2007). Specifically, regulators in several countries have passed comply-or-explain regulations to enforce a wide range of corporate social responsibility (CSR) related disclosure topics[47]. In short, the comply-or-explain system contains clauses that allow firms to deviate from governance or disclosure requirements, but mandates firms to *explain* their reasons if they forgo compliance. Although historically common outside the US, the comply-or-explain approach is also increasingly becoming popular in the US. For example, several sections of Sarbanes-Oxley Act (SOX) and Dodd-Frank Act contain such provisions (Coates and Srinivasan 2014; Honigsberg 2019).

Proponents argue that the comply-or-explain system recognizes and remedies the mandatory one-size-fits-all conundrum - particularly for broad disclosure topics such as nonfinancial reporting - while also putting pressure on firms to explain lack of disclosure (Ho 2017). However, others point out that firms could trigger the explain clause and forgo compliance, or provide perfunctory explanations for non-compliance (Arcot, Bruno, and Faure-Grimaud 2010; Christensen, Hail, and Leuz 2019).

Empirical research on the implications of comply-or-explain as a disclosure regulation is still limited. Early studies focus on capital-market reactions to disclosure regulations that contain comply-or-explain clauses (Grewal, Riedl, and Serafeim 2019;

[47] Examples of jurisdictions adopting the comply-or-explain approach for CSR disclosures include the European Union, United Kingdom, Australia, India, South Africa, Singapore, Hong Kong, Malaysia, Brazil and others.

Manchiraju and Rajgopal 2017). It is less clear how comply-or-explain regulations affect managerial disclosure judgements, particularly disclosures impacting the firm's stock price. Theories in psychology such as reason writing theory suggest that the pressure to justify one's decision to others make people more accountable, and potentially reduce decision bias (Liu 2018; Paxton, Ungar, and Greene 2012; Sieck and Yates 1997; Tetlock 1983). However, prior accounting studies have long documented that firm managers exploit ambiguity in reporting requirements to arrive at desired conclusions such as maintaining the firm's stock price (Bao et al. 2019; Graham, Harvey, and Rajgopal 2005; Healy and Palepu 2001; Verrecchia 1983).

In this study, I examine whether comply-or-explain regulation affects managers' disclosure recommendations of a negative event affecting the firm's underlying economics. I also examine whether potential effect of the comply-or-explain system is moderated by the firm's prior disclosure preference toward no disclosure.

Understanding the effects of a comply-or-explain regulation on managers' disclosure judgements is important as follows. First, while regulators in important economies such as the EU, UK, Australia, and India among others have recently passed CSR disclosure regulations that contain comply-or-explain clauses, other regulators such as the SEC continue to consider appropriate CSR disclosure requirements. For example, the SEC (2016, p. 213) is currently seeking feedback for several policy questions, among them is "if we were to adopt specific disclosure requirements involving sustainability or public policy issues, how could our rules elicit meaningful disclosure on such issues?". The SEC also asked "How could we create a disclosure framework that would be flexible enough to address such issues as they evolve over time?" (SEC 2016, p. 213). In the same public release, the commission notes a concern that adopting mandatory CSR disclosure rules may cause registrants to disclose information that is not material to investors. My

study should be informative to the SEC and other global regulators as they consider appropriate disclosure regulation for evolving disclosure issues, and in particular, the effectiveness of the comply-or-explain system. Second, the comply-or-explain system offers a fresh alternative to the voluntary *versus* mandatory regulation dichotomy that has been the focus of prior accounting research. I provide first evidence on how the comply-or-explain system affects managerial disclosure judgements. Further, examining managers' disclosure judgements across alternative disclosure regimes and reporting preferences is important because it highlights in settings where managers exhibit similar (different) disclosure behavior in response to proposed disclosure regulations, potentially mitigating the unintended consequences of costly disclosure regulations (Dye 1990; Leuz and Wysocki 2016; Libby, Rennekamp, and Seybert 2015).

I draw on reasoning and accountability theories to predict that managers' disclosure recommendation under a comply-or-explain regime is moderated by the firm's prior disclosure policy. Motivated reasoning theory suggests that managers arrive at disclosure choices that are consistent with pre-existing reporting preferences (Kunda 1990). Prior accounting research generally supports this prediction in various settings, and finds that accounting professionals exploit ambiguity in reporting requirements to arrive at desired conclusions (Hackenbrack and Nelson 1996; Kadous, Kennedy, and Peecher 2003; Mayorga and Trotman 2016; Tayler 2010; Wilks 2002). However, managers' motivated reasoning is constrained when they face higher litigation risk (Kothari, Shu, and Wysocki 2009). Following this reasoning, I first predict that managers are more likely to disclose a probable negative event affecting the firm's economic outlook in a comply-or-explain disclosure regulation than in a voluntary regime. A separate line of research based on accountability theory suggests that people – including accounting professionals - adjust their positions when the party to whom they are accountable has known *versus* unknown

preferences (Lerner and Tetlock 1999). Building on the accountability literature, I hypothesize that knowledge of the firm's prior disclosure policy moderates effects of comply-or-explain regulation, such that managers disclosure recommendation of a negative event is higher when prior disclosure policy of the firm is unknown than when it is known to be biased toward less disclosure.

To test my predictions, I conduct a 2 × 2 between-participants experiment with experienced corporate managers. I manipulate disclosure regulation type at two levels (comply-or-explain *versus* voluntary) and knowledge of the firm's prior disclosure policy (known to be biased toward no disclosure *versus* unknown). In my setting, participants (hereafter managers) consider a specific form of risk disclosure involving a climate change-related risk matter that poses *probable* risks to three key business segments of the firm. I focus on climate change risk matter because it is a disclosure issue that plausibly involves considerable managerial discretion and is a matter where there is less regulatory and/or professional guidance[48] (Ho 2018). The experimental approach is appropriate for my research question and hypotheses because archival data of firms subject to different disclosure regulations is unavailable and/or entails confounds across different institutional settings. In addition, firms' disclosure policy is difficult to observe in archival settings (Asay, Libby, and Rennekamp 2018; Mayorga and Trotman 2016). Further, experimental method allows me to more directly examine the effects of alternative disclosure regimes on managers' disclosure judgements while holding key features of the firm constant (Libby, Bloomfield, and Nelson 2002).

[48] Despite publishing an interpretive release to clarify existing disclosure requirements related to climate change-related risk disclosures (SEC 2010), the SEC continues to receive comment letters from the investing public as well as other stakeholder groups suggesting that current climate change-related disclosures are insufficient (SEC 2016). As a result, the SEC (2016, p. 215) seeks feedback for several policy questions including "Are existing disclosure requirements adequate to elicit the information that would permit investors to evaluate material climate change risk? Why or why not? If not, what additional disclosure requirements or guidance would be appropriate to elicit that information?".

Results are consistent with my predictions. Specifically, I find that managers are more likely to make disclosure of a negative event affecting the firm's underlying economics in a comply-or-explain disclosure regime than in a voluntary regime. I also find that the effect of a comply-or-explain regulation on managers' disclosure recommendations is larger when the firm's prior disclosure policy is unknown than when it is known to be biased toward no disclosure. Mediation analyses further indicate that increased accountability drives managers' increased likelihood of recommending disclosure in a comply-or-explain disclosure system. These results are robust after controlling a variety of manager-specific factors such as their financial reporting experience, overall managerial experience, accounting knowledge, and familiarity with capital-market consequences of bad news disclosures.

I contribute to the literature in several ways. First, I contribute to recent archival studies that provide evidence of capital-market and real effects of disclosure regulations that contain comply-or-explain clauses[49] (Dharmapala and Khanna 2018; Fiechter, Hitz, and Lehmann 2019; Grewal, Riedl, and Serafeim 2019; Manchiraju and Rajgopal 2017). I extend this line of research by considering how comply-or-explain disclosure regulations affect managerial disclosure judgements. My study is closely related to Honigsberg (2019) who shows that misreporting at US hedge funds declined after a comply-or-explain disclosure regulation. Consistent with a real effect channel, Honigsberg (2019) finds that reduction in misreporting is larger for funds most likely to be scrutinized by the SEC and

[49] I also contribute to a large corporate governance literature that examines the effectiveness of comply-or-explain governance regulations. This literature provides mixed results. For example, several studies find that the comply-or-explain regime is associated with high compliance rate (Akkermans et al. 2007; Arcot, Bruno, and Faure-Grimaud 2010; He and Li 2018). However, other studies find the opposite, and conclude that the comply-or-explain regime is ineffective (Andres and Theissen 2008; Hooghiemstra and van Ees 2011; Keay 2014; MacNeil and Li 2006; Van de Poel and Vanstraelen 2011). I reconcile mixed results of prior literature by considering how the comply-or-explain interacts with pre-existing goals of the firm – an environmental factor that the comply-or-explain literature has not considered, yet is known to affect corporate outcomes (Bamber, Jiang, and Wang 2010; Gibbins, Richardson, and Waterhouse 1990).

investors, and is driven by hedge funds making real changes in their internal governance mechanisms. I use a controlled experiment with experienced managers to provide corroborating evidence on a different channel that is difficult to observe in an archival setting. Specifically, my findings indicate that comply-or-explain disclosure regulations increase managers' perceived accountability, which in turn influence their disclosure recommendations. Importantly and unlike prior literature, I show that the firm's prior disclosure preference is an important variable in the effectiveness of comply-or-explain regulations.

Second, I extend the vast and growing CSR reporting literature that has largely focused on CSR reporting in *voluntary* settings. Specifically, I contribute to a recent line of studies that shows personal social preferences of managers may explain CSR investment and disclosure decisions (Church et al. 2019; Davidson, Dey, and Smith 2019; Martin and Moser 2016; Riedl and Smeets 2017). Unlike prior research, I consider a setting in which CSR reporting is *mandatory*. In doing so, I respond to Moser and Martin (2012, p. 802) who call for experimental research that creates and examines experimental settings in which alternative CSR disclosure requirements exist.

Third, I contribute to two separate lines of accounting research that document pre-existing *personal* and *firm* preferences affect managers' disclosure judgements (Baginski et al. 2017; Bamber, Jiang, and Wang 2010; Mayorga and Trotman 2016). I extend this line of literature by considering the joint effect of pre-existing personal *and* firm preferences across alternative disclosure regimes. Specifically, I find that managers' personal views on environmental risks and prior disclosure policy of the firm interact, such that managers are less likely to recommend disclosure of a negative event in a comply-or-explain regime.

Finally, my study has policy implications for global regulators, and particularly responds to the SEC's question of "how could our rules elicit meaningful disclosure on

sustainability issues?" (SEC 2016, p. 213). Similarly, regulators in Brazil, Singapore and Hong Kong among others have recently moved from voluntary to a "comply-or-explain" CSR reporting model. My study should be informative to the SEC as well as regulators in other parts of the world that are considering alternative disclosure regulations. Specifically, I show that the incremental effect of comply-or-explain regulations on managers' disclosure judgements is contingent on pre-existing disclosure norms of the firm.

The rest of the paper proceeds as follows. Section 2 provides background discussion on comply-or-explain regulations and reviews relevant literature. In Section 3, I develop my theoretical framework and hypotheses. Section 4 describes participants, experimental manipulations and procedures as well as other research design choices. Section 5 presents the results as well as additional analyses. Section 6 concludes the paper.

3.2 Background and Related Literature

3.2.1 Comply-or-Explain Regulations

The 'comply-or-explain' regulatory approach was first introduced in the UK's Cadbury Report on Corporate Governance in 1992, and is often presented as an alternative disclosure regulation to voluntary or mandatory disclosure requirements both in the US and internationally[50] (Coates and Srinivasan 2014; Ho 2017). Under this approach, firms can apply all recommended best practices, or *explain* why a specific requirement has not been complied. The idea is to "let the market decide" whether a firm's application or explanation of recommended practices is appropriate. Therefore, the comply-or-explain regulatory approach is essentially enforced by investors and the capital-market rather than regulators (Ho 2017). As there are no regulations on the content of the explanations, investors and the

[50] Several developing countries such as China, India, South Africa, Brazil and Malaysia have also embraced the comply-or-explain system both for corporate governance and disclosure requirements.

market are left to judge the appropriateness of the explanations firms provide and stimulate a "market sanction" rather than a regulatory action (Keay 2014; Shrives and Brennan 2015). As such, this regulatory approach presumes a high level of shareholder monitoring and that they are in favor of the recommended practices.

Prior research largely focuses on the effects of comply-or-explain corporate governance regulations, and the empirical evidence is mixed. Several studies show that the comply-or-explain is associated with certain outcomes desired by regulators. For example, Akkermans et al. (2007) find a high compliance rate with the governance code in The Netherlands, and that compliance is positively associated with firm size – consistent with larger firms getting more attention and scrutiny from by the media and the investing community. Arcot, Bruno, and Faure-Grimaud (2010) find that more than half of their sample firms were fully compliant with all the provisions of the comply-or-explain corporate governance code in the UK.

However, other studies find that the comply-or-explain regime is ineffective (Hooghiemstra and van Ees 2011; Keay 2014; MacNeil and Li 2006; Seidl, Sanderson, and Roberts 2013; Van de Poel and Vanstraelen 2011). For example, Bianchi et al. (2011) compare actual *versus* reported compliance and find that the level of effective compliance is considerably lower than firms' reported levels of compliance. Their results also show that effective compliance increases for firms with more independent directors and high institutional investors. Van de Poel and Vanstraelen (2011) find a high noncompliance rate (only 38 percent of their sample firms complied), with noncomplying firms either providing poor explanations or none at all. Arcot, Bruno, and Faure-Grimaud (2010) reach similar conclusions in the UK and find that noncomplying firms either provided perfunctory explanations or none at all. Finally, Shrives and Brennan (2015) focus on explanations to

noncompliance in the UK setting and find that, on average, explanations are less readable, with the majority categorized as 'more difficult' or 'harder' to read.

More recently, a growing number of archival studies provide evidence of capital-market and real effects of disclosure regulations that contain comply-or-explain provisions in several institutional settings. The capital-market research shows strong negative market reactions to comply-or-explain disclosure regulations in several institutional settings (Grewal, Riedl, and Serafeim 2019; Manchiraju and Rajgopal 2017). Other studies find several economic benefits of comply-or-explain disclosure regulations via reductions in information asymmetry (Barth et al. 2017; Lee and Yeo 2016). In addition, several studies provide evidence supporting real effects of comply-or-explain disclosure regulations (Dharmapala and Khanna 2018; Fiechter, Hitz, and Lehmann 2019).

However, little is known about how comply-or-explain disclosure regulations affect reporting and disclosure quality. A recent exception is Honigsberg (2019) who finds that misreporting at US hedge funds decreases after a comply-or-explain disclosure regulation. Consistent with cross-sectional variations, Honigsberg (2019) shows that reduction in misreporting is larger for funds most likely to be scrutinized by the SEC and investors, and is driven by hedge funds making changes in their internal governance mechanisms.

I extend prior literature in two ways. First, much of the prior literature focuses on capital-market and real effects of comply-or-explain governance - and more recently - disclosure regulations. Instead, I examine the effect of a comply-or-explain disclosure regulation on managerial disclosure judgements. I capitalize on comparative advantages of experimental methods to more directly examine the effect of a comply-or-explain disclosure regulation on managers' disclosure judgements while holding key features of the firm constant. Second, prior studies provide evidence suggesting that the comply-or-explain regime is more effective for firms most likely to be scrutinized by the media and

regulators (i.e., larger firms and/or firms with prior history of misconduct) (Akkermans et al. 2007; Honigsberg 2019). Unlike prior studies, I consider a different dimension that is difficult to observe in archival settings. Specifically, I consider whether the firm's prior disclosure policy moderates the impact of a comply-or-explain regime on managers' disclosure judgements (Asay, Libby, and Rennekamp 2018; Mayorga and Trotman 2016).

3.2.2 Firm's Prior Disclosure Policy

Firms generally have clear reporting and disclosure preferences. For example, firms may commit to periodic voluntary disclosures such as releasing earnings guidance from time to time, providing forward-looking disclosures or issuing standalone sustainability reports. While firms' voluntary disclosure policies are influenced by economic considerations (Graham, Harvey, and Rajgopal 2005), accounting research demonstrates that firms' disclosure behavior is also vulnerable to a number of other forces including manager-specific factors (Bamber, Jiang, and Wang 2010; Brochet, Faurel, and McVay 2011), disclosure preferences of the board (Cai et al. 2014; Caskey, Nagar, and Petacchi 2010; Richardson, Tuna, and Wysocki 2003), and internal politics of the firm (Gibbins, Richardson, and Waterhouse 1990; Holland 2005). Theory and empirical evidence indicate that disclosure preferences of various actors of the firm can significantly explain disclosure pattern of companies (Bamber, Jiang, and Wang 2010; Caskey, Nagar, and Petacchi 2010; Lerner and Tetlock 1999).

Although firms' disclosure preferences are often known, changes in corporate culture, board structure and top executive turnover can lead to disclosure preferences to become unknown. In addition, firms may not have a preference for specific disclosure issues because "many boards assess whether or not information needs to be disclosed in context rather than in isolation" (Mayorga and Trotman 2016, p. 61). Finally, certain

disclosure matters are by nature "rare events" in which case managers have no prior knowledge of the firm's preferences.

In this study, I examine how comply-or-explain regulation interacts with the firm's prior disclosure policy. Using an experiment, I design a scenario where corporate managers assess and decide whether to disclose to investors a probable risk event affecting the firm's underlying economic outlook. I manipulate disclosure regime at two levels (voluntary *versus* comply-or-explain). I also manipulate knowledge of the firm's prior disclosure preference has been biased toward no disclosure *versus* unknown. In the next section, I describe research theory and hypotheses.

3.3 Theory and Hypotheses

3.3.1 Motivated Reasoning

Motivated reasoning occurs when decision-makers have a preference or desire that relates to the outcome of a given reasoning task (Klein and Kunda 1992; Kunda 1990). Essentially, motivated reasoning posits that pre-existing preferences affect human judgement as long as people can construct seemingly reasonable justifications for their conclusions (Ditto and Lopez 1992; Kunda 1990). In this process, people selectively access, evaluate and construct evidence to support a preferred outcome (Kunda 1990). Consequently, information consistent with a preferred outcome is scrutinized less critically than information inconsistent with a preferred conclusion (Ditto and Lopez 1992). In the presence of ambiguity, motivating reasoning causes people to exploit such ambiguity to support their preferred conclusions.

The motivated reasoning phenomenon is extremely robust and has been observed in various settings including investors' directional preferences (Hales 2007; Han and Tan 2010), auditing tasks (Hackenbrack and Nelson 1996; Wilks 2002), tax professionals'

behavior (Kadous, Magro, and Spilker 2008) and managerial judgements (Mayorga and Trotman 2016; Tayler 2010). In an experiment with investors, Hales (2007) finds that investors are vulnerable to motivated reasoning, such that those holding long (short) investment positions in a firm's stock are more optimistic (pessimistic) about the company's earnings prospects. Experimental audit research also shows that auditors are susceptible to motivated reasoning such that they permit and justify client-preferred accounting outcomes to avoid potential loss of clients (Hackenbrack and Nelson 1996; Kadous, Kennedy, and Peecher 2003).

Of particular relevance to this study, prior accounting literature documents that managers are vulnerable to motivated reasoning in their disclosure choices. Specifically, managers have strong incentives to withhold bad news disclosures, or present firm performance in a positive light for several reasons. First, managers may withhold negative disclosures to smooth earnings or maintain their firm's stock price (Bao et al. 2019; Graham, Harvey, and Rajgopal 2005; Healy and Palepu 2001; Verrecchia 1983). Second, managers may delay disclosure of a negative event and gamble firm performance will improve in the future (Graham, Harvey, and Rajgopal 2005). Third, managers may be reluctant to release bad news disclosures to gain private benefits, especially when their own compensation is linked to firm value (Baginski et al. 2017; Nagar, Nanda, and Wysocki 2003). Finally, managers are less likely to voluntarily provide bad news disclosures unless the benefits of doing so exceed the costs (Graham, Harvey, and Rajgopal 2005; Verrecchia 1983). For example, managers may voluntarily provide bad news disclosures to pre-empt litigation risk or avoid reputational costs (Houston et al. 2019; Skinner 1994).

However, managers' motivated reasoning is constrained by their ability to construct seemingly reasonable justifications for their reporting and disclosure preferences (Kunda 1990). Consistent with this conjecture, prior literature shows that mandatory disclosure

rules attenuate managers' motivated reasoning to withhold bad news disclosures. For example, Kothari, Shu, and Wysocki (2009) find that managers' tendency to delay bad news disclosures significantly declined after Regulation FD.

It is less clear how a 'comply-or-explain' disclosure regulation affects managers' bad news disclosure judgements. Recent studies show that disclosure regulations that contain comply-or-explain provisions generate real changes in firm behavior, and lead to outcomes desired by regulators (Dharmapala and Khanna 2018; Fiechter, Hitz, and Lehmann 2019; Honigsberg 2019). For example, Fiechter, Hitz, and Lehmann (2019) find a significant *increase* in the CSR performance of previously non-reporting European firms after a comply-or-explain disclosure directive in the EU. Similarly, Dharmapala and Khanna (2018) find a significant *increase* in CSR spending of Indian firms relative to control firms after a comply-or-explain disclosure regulation in India. Other studies find strong capital-market reactions to comply-or-explain disclosure regulations, consistent with investors anticipating such regulations to affect managers' disclosure and real economic decisions (Grewal, Riedl, and Serafeim 2019; Manchiraju and Rajgopal 2017).

In this study, I examine how a 'comply-or-explain' disclosure regulation affects managers' disclosure recommendations of a negative event affecting the firm's underlying economics. I argue that comply-or-explain regulation constrains managers' motivated reasoning and increases their disclosure recommendations of a negative event for two reasons. First, given the *comply* clause in comply-or-explain regulations, managers' litigation risk is likely heightened. Specifically, managers may find it more difficult to construct reasonable justifications for failing to provide timely disclosures under a comply-or-explain system than under a voluntary regime in the event things go wrong and firm

performance does not improve in the future[51]. Consistent with this conjecture, Honigsberg (2019) finds that misreporting at US hedge funds decreases after a comply-or-explain disclosure regulation. Importantly, she finds that the regulation caused funds to make real internal governance changes which in turn drive reductions in misreporting.

Second, comply-or-explain regulations may also constrain managers' motivated reasoning through the *explain* clause by increasing their cognition. Prior psychology and legal research demonstrate that reason writing does indeed reduce decision bias (Cohen 2015; Oldfather 2007; Paxton, Ungar, and Greene 2012; Posner 1995). Reason writing, or the pressure to justify one's decision to others, increases human cognitive process and makes people become more cautious when making decisions (Liu 2018; Sieck and Yates 1997; Tetlock 1983). Posner (1995, p. 1447) puts it this way: "Reasoning that seemed sound when "in the head" may seem half-baked when written down, especially since the written form of an argument encourages some degree of critical detachment in the writer, who in reading what he has written will be wondering how an audience would react".

Of particular relevance to my setting, Bentley (2018) conducted an experiment and finds that managers asked to provide narrative explanations of their performance engage in less operational distortion and surrogation compared to managers who are not required to provide narrative explanations, suggesting that reporting requirements that contain narrative explanations may indeed constrain managers' motivated reasoning. Based on the foregoing discussion, I propose the following hypothesis:

H1: Managers are more likely to recommend disclosure of a negative event affecting the firm's underlying economics in a comply-or-explain disclosure regulation than in a voluntary regime.

[51] It is possible that comply-or-explain disclosure regulations have the opposite effect and amplify managers' motivated reasoning to withhold bad news disclosures, such that managers simply provide perfunctory explanations to avoid and pre-empt future investor lawsuits. In an experiment with auditors, Kadous, Kennedy, and Peecher (2003) find that regulations designed to constrain auditors' motivated reasoning do indeed exacerbate auditors' directional preferences to accept client-preferred methods and on their ratings of the quality of that method.

3.3.2 Accountability to an Audience with Known *versus* Unknown Views

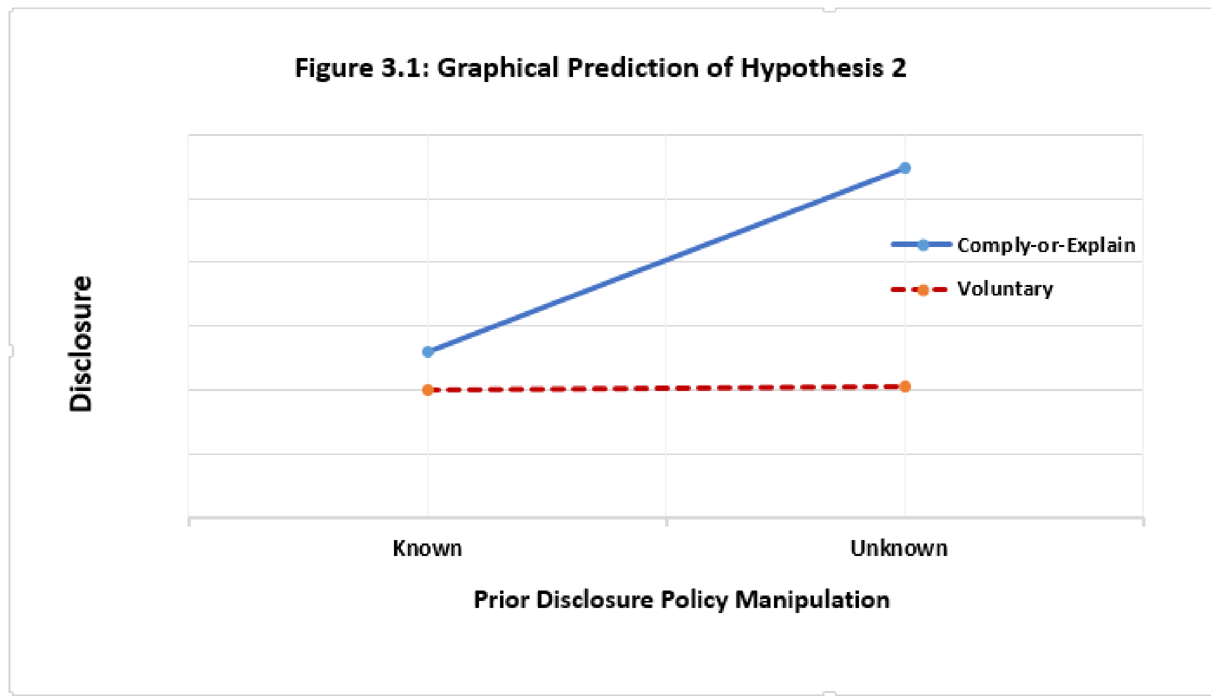
Prior accountability literature suggests that people adjust their positions when the party to whom they are accountable has *known* versus *unknown* preferences (for review see Lerner and Tetlock 1999). This conformity occurs for two primary reasons. First, people adopt the positions of their supervisors to avoid "unnecessary cognitive work of analyzing the pros and cons of alternative courses of action, interpreting complex patterns of information, and making difficult trade-offs" (Lerner and Tetlock 1999, p. 256). Second, motivated reasoning causes subordinates to tailor messages to the positions of their superiors given subordinates have intrinsic motivations to get-along and maintain professional connections with their supervisors (Kunda 1990).

Experimental research in various settings supports these predictions, and concludes that people conform to the known preferences of their respective audience (Buchman, Tetlock, and Reed 1996; Chen, Shechter, and Chaiken 1996; Hackenbrack and Nelson 1996; Mayorga and Trotman 2016; Mero and Motowidlo 1995; Peecher 1996; Wilks 2002). However, when the views of an audience are unknown – people generally engage in rational cognitive effort to construct a reasonable recommendation (Lerner and Tetlock 1999).

Wilks (2002) reports that professional audit managers conformed to the known preferences of the audit partner in a going-concern task. Other studies also find that auditors adopted the preferred views of their supervisors or client firms (Buchman, Tetlock, and Reed 1996; Peecher 1996). Further, experimental studies report that firm managers are vulnerable to pre-existing reporting and disclosure preferences (Asay, Libby, and Rennekamp 2018; Mayorga and Trotman 2016). For example, Mayorga and Trotman (2016) find that knowledge of the board's prior disclosure preference toward no disclosure moderated the otherwise positive effect of reasonable investor-perspective taking on

managers' disclosure recommendations of a negative event, such that managers were less likely to disclose the negative event when the firm's prior disclosure bias was known than unknown.

However, prior research focused on settings where disclosure regulation is not salient. In this study, I examine whether managers' disclosure recommendations of a negative event are vulnerable to the known *versus* unknown disclosure preferences of the firm when disclosure requirement is salient (i.e., voluntary *versus* comply-or-explain). Motivated reasoning theory and prior accounting research suggest that managers will delay bad news disclosures if the disclosure requirement is voluntary, regardless of whether the firm's prior disclosure policy is known or unknown. This is because managers are intrinsically motivated to withhold bad news disclosures in voluntary settings unless the benefits of providing bad news disclosures exceed the costs (Verrecchia 1983). Mayorga and Trotman (2016, p. 53) argue that managers who do not know the firm's prior disclosure policy are more likely to recommend against disclosure than managers who know that the firm's prior disclosure policy is biased towards no disclosure because managers in the former settings will need to devote extra mental thought to arrive at a defensible disclosure recommendation. For this reason, I do not expect significant differences between the known and unknown conditions when the disclosure requirement is voluntary. The dotted lines in Figure 3.1 manifest this prediction as shown below:



Note: Figure 3.1 summarizes predicted combined effect of regulation and the firm's prior disclosure policy on managers' disclosure recommendations. I manipulate (1) whether disclosure regulation is voluntary *versus* comply-or-explain and (2) whether the firm's prior disclosure policy is known to be biased toward no disclosure *versus* unknown. The dependent variable, *DISCLOSURE*, is measured on an 11-point scale anchored from -5 = "extremely supportive of NOT disclosing" to 5 = "extremely supportive of disclosing", with the midpoint labeled "neutral".

However, H1 predicts that a comply-or-explain disclosure regulation constrains managers' motivated reasoning. When there is a comply-or-explain regulation and *known* disclosure preferences of the board, managers are more likely to engage in additional cognitive effort to simultaneously get-along with the board of directors *and* highlight potential litigation risk from investors for failing to provide timely disclosures. As such, I predict that known disclosure preferences of the firm will attenuate the impact of comply-or-explain regulation on managers' disclosure recommendations. In contrast, reason writing theory suggests that the impact of comply-or-explain is likely greater when there is a comply-or-explain regulation and *unknown* disclosure preferences of the board. Figure 3.1 graphically plots an *ordinal* interaction, such that the effect of comply-or-explain regulation on managers'

disclosure recommendations is greater when the firm's prior disclosure policy is unknown than known to be biased toward non-disclosure. Stated formally, hypothesis 2 is as follows:

H2: The effect of a comply-or-explain regulation on managers' disclosure recommendations is greater when the firm's prior disclosure policy is unknown than when it is known.

3.4 Research Method

3.4.1 Experimental Design and Participants

I employ a 2 × 2 between-participants experimental design to test my predictions. The first independent variable is disclosure regulation type. I vary whether the disclosure regime is voluntary *versus* comply-or-explain. The disclosure regime manipulation occurs immediately after participants read a disclosure matter that has come to the attention of top management. The second independent variable is knowledge of the firm's prior disclosure policy. I manipulate whether the firm's prior disclosure policy is known to be biased toward no disclosure *versus* unknown. In the *known* condition, participants are informed about the firm's prior disclosure preferences shortly before reading the specific disclosure matter and the applicable disclosure regulation.

I recruited 121 experienced corporate managers via Qualtrics Panel Management[52] (hereafter Qualtrics). Qualtrics provided assurance that the participants reside in the United States, and have extensive corporate working experience. In addition, I included three screening questions (Holt and Loraas 2019). First, I asked participants their highest academic qualification, and retained those with a graduate degree (i.e., Master's degree or higher). Second, I asked participants to select one of three choices: (1) I have an MBA, (2)

[52] Recent experimental accounting research has relied on several web-based research organizations to recruit difficult-to-get participants including audit committees, CFOs, and auditors (Holt and Loraas 2019; Kang 2019; Pyzoha 2015). Qualtrics is one of the most widely used web-based research organizations. Farrell, Grenier, and Leiby (2017) report that participants in online experiments exert a comparable effort and honesty as participants in traditional laboratory experiments.

I do not have an MBA or (3) other. I retained participants with an MBA. Finally, I asked participants where they have obtained their MBA, and retained participants who responded 'I obtained my MBA from the US'. Participants who met these requirements (n = 121) were allowed to proceed to the experiment.

Qualtrics offers various incentive packages such as gift cards and monetary incentives to encourage participation. Qualtrics does not disclose details of their participant compensation packages. I paid AU$25 (about US$17 at the time) per participant for their participation. The experiment was administered via Qualtrics software, which randomly allocated participants that met the criteria to one of the four experimental conditions[53].

On average, participants are 55.44 years-old, 62% are male and have an average of 30.23 (18.57) years of working (managerial) experience. Participants took an average of 4.9 (4.6) college-level accounting (finance) courses, with 74.4 (80.2) percent having financial (nonfinancial) reporting experience. Participants took an average of 13.36 minutes to complete the task. I conduct my main analyses with all 121 participants[54,55]. Table 3.1 below summarizes demographical information of the participants.

[53] Approval to use human subjects was granted by The University of Adelaide's Office of Research Ethics, Compliance and Integrity.

[54] The demographic profile of the participants nor time taken to complete the task do not significantly differ across the experimental conditions.

[55] Qualtrics provided me a filtered dataset after deleting data that they deemed of poor quality. Broadly defined, these include participants who have (1) not met the screening criteria (2) provided incomplete responses and (3) failed manipulation checks. In addition, Qualtrics applies speeding checks and automatically excludes participants that speed through the experiment.

Table 3. 1: Descriptive statistics for participants

Number of participants	121
Age and Sex	
Age (Mean in years)	55.44
Male (%)	62
Reporting experience	
Number of participants with financial reporting experience	90
Number of participants with nonfinancial reporting experience	97
Working Experience	
Number of years of full time work experience (Mean)	30.23
Number of years of managerial experience (Mean)	18.57
Participants' self-reported accounting and reporting knowledge	
Financial accounting (Mean)	7.58
Fin. Statement analysis (Mean)	7.79
Nonfinancial reporting (Mean)	7.37
Overall reporting (Mean)	6.52
Distribution of participants according to firm size	
Number of participants working for small firm	55
Number of participants working for medium-sized firm	23
Number of participants working for large corporation	43
Participants with experience in the following industries:	
Financial services / Insurance	25
Manufacturing	19
Computer / Software	16
Retail / Consumer Products	10
Energy / Utilities	4
Construction	4
Chemical / Pharmaceutical industry	4
Telecommunications	3
Agriculture / Food	1
Mass Media	1
Other	34

Note: Table 1 presents the descriptive profile for the managers who participated in the experiment. Participants' self-reported accounting and reporting knowledge is measured on an 11-point scale anchored from 0 = "extremely low" to 10 = "extremely high", with the midpoint labeled "fair". For the firm size classification, participants were asked to select the size of their current firm. For the industry classification, I asked participants to select all industries in which they have significant working experience.

3.4.2 Case and Procedures

After answering the screening questions described above, all participants begin the experiment by reading through background information and financial performance of MIA Corp., a hypothetical publicly-traded firm in the retail industry. Participants were told to assume the role of Director of Financial Reporting whose responsibility was to make disclosure recommendations to the Board of Directors. All participants were informed that they will assess a "specific disclosure matter" that has come to the attention of management, and then will provide a recommendation to the Board of Directors based on whether they believed disclosure of the matter is required at this time.

The disclosure matter involved management receiving preliminary evidence of a climate change-related risk affecting the underlying economics of the firm[56]. Specifically, participants read that severe floods, hurricanes and other extreme weather events pose *probable* risks to three business segments in coastal areas of MIA Corp[57]. Participants are informed that the three business segments account for a significant portion of the Company's overall sales revenue, and has contributed to 28% of the total sales revenue in 2018. In addition, participants are told that management is uncertain of the magnitude of the financial risks to investors or the firm's share prices. To reduce noise, financial performance of the firm was favorable across all conditions. In order to provide incentives for managers to consider their judgment in light of investors' earnings expectations,

[56] I purposely focused on climate change-related risk disclosure given that comply-or-explain disclosure regulations are generally used for broad disclosure topics such as climate risk disclosures. In addition, recent studies show that climate change-related disclosures have significant firm value effects (Matsumura, Prakash, and Vera-Munoz 2018; Matsumura, Prakash, and Vera-Muñoz 2014). Further, survey evidence also indicates that investors are increasingly demanding climate change risk disclosures (Krueger, Sautner, and Starks 2020).

[57] The Carbon Disclosure Project (CDP) identifies three forms of climate change-related risks: (1) physical risks, (2) regulatory risks, and (3) other risks. In my setting, I focus on physical risk exposure because information on the other two risks "is not particularly proprietary and may also be gathered from other information sources" (Schiemann and Sakhel 2019, p. 810).

participants are further told that official public announcement of the Company's annual financial performance has not been made at this point pending decision of the specific disclosure matter.

Finally, all participants completed debriefing questions relating to explanatory measures for their judgements, their environmental attitude, and demographic profile.

3.4.3 Independent Variables

I manipulate two independent variables in a between-participants experiment. First, I manipulate disclosure regulation at two levels (voluntary *versus* comply-or-explain). In the voluntary conditions, participants are informed that "**management disclosure** of identified material environmental physical risks is **voluntary**". Participants are further told that "some management voluntarily discloses to investors whether or not there are material environmental risks; others choose to be silent on such matters". I adapted the wording "some management voluntarily discloses to investors" from the experimental instrument in Kelly and Tan (2017), and is intended to reduce participants' own interpretations of the applicable disclosure rules related to climate change-related risk disclosures, or more generally environmental disclosures[58]. In the comply-or-explain conditions, participants are informed that "**management disclosure** of identified material environmental physical risks is required on a **"Comply-or-Explain"** basis", and that the disclosure regulation "contains provisions that allow publicly listed firms to deviate from recommended disclosure rules if such disclosure rules are not applicable to their operations, but mandates an **explanation** for non-disclosure".

[58] Existing disclosure rules in the US on climate change-related risk disclosures are ambiguous (Matsumura, Prakash, and Vera-Munoz 2018), despite the SEC releasing an interpretative guidance to clarify existing climate change-related disclosure requirements (SEC 2010, 2016).

Second, I manipulate knowledge of the firm's prior disclosure policy at two levels (known *versus* unknown). In the known conditions, I adapted the approach used in Mayorga and Trotman (2016) to operationalize knowledge of the firm's prior disclosure policy by stating that the disclosure preferences of the board. Specifically, participants read that:

> *"At the last Board of Directors' meeting, the board of MIA Corp expressed its concern that management has been* ***too keen to disclose*** *information in situations where it was difficult to quantify the magnitude of the event. All the directors indicated that releasing speculative information may potentially harm the firm's share price for no underlying economic reasons."*

Rather than focusing on the preferred views of the CEO or CFO, I chose disclosure preferences instituted by the board to reduce managers' automatically conforming to CEO preferences. Given the close hierarchical distance between mid-level managers responsible for disclosure recommendations and top management, mid-level managers are less likely to disagree with the known disclosure positions of CEOs/CFOs compared to board of directors. To heighten disclosure preference of the board, I asked participants to "summarize briefly your thoughts about the **concerns of the Board** on management's past disclosure behavior in situations where it is difficult to quantify the magnitude of the event" immediately after viewing the prior disclosure policy manipulation[59]. Asking participants to provide their thoughts on the known views of an audience as a heightening strategy has been used in prior experimental studies (Mayorga and Trotman 2016; Peecher 1996; Wilks 2002). I provide full details of the experimental instrument in Appendix B of this paper.

[59] All participants that were exposed to the firm's prior disclosure policy provided narrative explanations indicating that the board of directors are biased toward no disclosure.

3.4.4 Dependent and Process Variables

The primary dependent variably is managers' disclosure recommendations. After reading the case materials containing the relevant manipulations, participants made a disclosure judgement. Specifically, participants were asked to provide a disclosure recommendation to the Board of Directors based on whether they believed disclosure of the matter is required at this time. Participants responded on an 11-point scale anchored from -5 = "extremely **supportive of NOT** disclosing" to 5 = "extremely **supportive of disclosing",** with the center point labeled "neutral". Across all conditions, I required participants to provide a brief narrative statement to explain their disclosure recommendation immediately after making their disclosure judgement[60].

I then asked participants to respond to two process variables. First, I collected a measure of participants' feelings of accountability by asking "given the disclosure requirement presented in the case, to what extent do you feel **accountable** to disclose the specific risk matter in the case". Participants responded on an 11-point scale anchored from 0 = "not at all accountable" to 10 = "extremely accountable". Second, I asked participants to indicate how the disclosure requirement affected their judgement by asking them "given the disclosure requirement presented in the case, to what extent did the **disclosure requirement** described in the case influence your disclosure recommendation? Participants responded on an 11-point scale anchored from 0 = "not at all" to 10 = "extremely".

[60] In the voluntary conditions, I asked participants: "In the space provided below, please briefly explain your judgement to help us understand why your response might be different from those of other participants in this study". In the comply-or-explain conditions, participants responded to: "In the space provided below, please briefly write a narrative statement to help the Board explain to investors why disclosure or non-disclosure is appropriate at this time as you would in the real world". I deliberately used different wording across disclosure regime conditions. This allows me to collect narrative explanations across all conditions while also separately heightening the comply-or-explain regulation.

3.5 Results

3.5.1 Manipulation Checks

Holt and Loraas (2019) recommend researchers using Qualtrics Panels to include (1) screening questions at the beginning of the survey, (2) manipulation and attention check questions throughout the experiment and (3) open-ended questions to detect invalid responses. Based on this, participants responded to two questions to ensure that my manipulations were successful. First, I asked participants to recall the disclosure regulation in which they were assigned to in order to confirm my disclosure regulation manipulation was successful. I provided participants three options to choose from: voluntary, comply-or-explain or mandatory. Second, to check the firm' prior disclosure policy manipulation, I asked participants to recall the concerns of the board about management disclosure and select between whether there was a concern or no concern (Mayorga and Trotman 2016). Participants who have failed my manipulation checks were automatically screened out (Holt and Loraas 2019). Therefore, all the 121 participants that are included in the final sample successfully recalled the correct disclosure regulation and the views of the board in their respective condition[61].

Additionally, I included an attention check question and asked participants to recall whether the financial performance of the case firm was (1) favorable, (2) unfavorable or (3) financial performance was not mentioned in the case. Over 90% of the participants correctly selected that the performance of the case firm was favorable[62]. Finally and as described before, I included two open-ended questions to heighten the manipulations.

[61] Qualtrics does not disclose details of the number of participants nor data on the participants who have failed the manipulation checks.

[62] Excluding participants who have failed the attention check (n = 12) does not change the statistical inferences of this study. Specifically, the main effect of regulation (p = 0.007) and firm's prior disclosure policy (p = 0.079) and their interaction (p = 0.426) are consistent with the full sample results reported in Panel B of Table 3.2.

3.5.2 Test of Hypotheses

Based on my theory, I predict that managers are more likely to recommend disclosure of a negative event in a comply-or-explain regulatory system compared to a voluntary regime. I also expect that the effect of the comply-or-explain regulation on managers' disclosure recommendations is greater when the firm's prior disclosure policy is unknown than when it is known to be biased toward no disclosure. To test these predictions, I conduct full factorial ANOVA using managers' disclosure recommendations as the dependent variable (hereafter Disclosure) and regulation type (hereafter Regulation), firm's prior disclosure policy (hereafter Prior Policy) and their interaction as independent variables. Panel A of Table 3.2 presents descriptive statistics for managers' disclosure recommendations, Panel B reports the results of ANOVA, Panel C reports planned interaction contrasts for H2, and Panel D summarizes the follow-up simple effect test results.

Descriptive results in Panel A of Table 3.2 show that the means for managers' disclosure recommendations are higher in the comply-or-explain conditions relative to the voluntary conditions (mean 2.20 > 0.68). Similarly, the disclosure means in the unknown conditions are higher than the means in the known conditions (1.90 > 0.98). The ANOVA results in Panel B of Table 3.2 show a significant main effect of regulation, such that managers are more likely to recommend disclosure of a negative event in comply-or-explain disclosure regulation *versus* voluntary disclosure regime (mean 2.2 > 0.68, $F_{1, 117} = 10.181$, $p = 0.002$, two-tailed). Therefore, results support H1. I also find a marginally significant main effect of the firm's prior disclosure policy. Consistent with accountability theory that people conform to the known preferences of their audience, results show that managers are less likely to recommend disclosure of a negative event when the firm's prior disclosure policy is known to be biased toward no disclosure than when it is unknown (mean 1.90 > 0.98, $F_{1, 117} = 3.679$, $p = 0.058$, two-tailed).

Table 3. 2: Hypotheses testing: Descriptive statistics and ANOVA for Disclosure

Panel A: Mean [Standard Deviation] for Disclosure

Regulation type	**Prior disclosure policy**		
	Known	Unknown	Total
Voluntary	0.33 [3.04] n = 30	1.03 [2.83] n = 30	0.68 [2.94] n = 60
Comply-or-Explain	1.63 [2.39] n = 30	2.74 [2.00] n = 31	2.20 [2.25] n = 61
Total	0.98 [2.79] n = 60	1.90 [2.57] n = 61	1.45 [2.71] n = 121

Panel B: ANOVA

Source	**SS**	**df**	**Mean Square**	**F**	***p*-value**
Regulation	68.440	1	68.440	10.181	**0.002**
Prior Policy	24.732	1	24.732	3.679	**0.058**
Regulation × Prior Policy	1.262	1	1.262	0.188	0.666
Error	786.54	117	6.723		

Panel C: Planned interaction contrasts for H2

Source	**SS**	**df**	**Mean Square**	**F**	***p*-value**
Regulation × Prior Policy	31.788	1	31.788	12.795	**0.001**
Contrasts [–2, –2, +1 and +3]					

Panel D: Simple main effects tests

Simple effects	**df**	**t**	***p*-value**
Effect of comply-or-explain when prior disclosure policy is known	117	1.644	0.105
Effect of comply-or-explain when prior disclosure policy is unknown	117	3.939	**0.000**
Effect of prior disclosure policy given voluntary regime	117	2.433	**0.019**
Effect of prior disclosure policy given comply-or-explain	117	0.473	0.638

Simple effect contrasts: DISCLOSURE

- Contrast One: −1, −1, +2 and 0; Contrast Two: −1, −1, 0 and +2
- Contrast Three: −2, +1, 0 and +1; Contrast Four: 0, +1, −2 and +1
- All p-values are two-tailed.

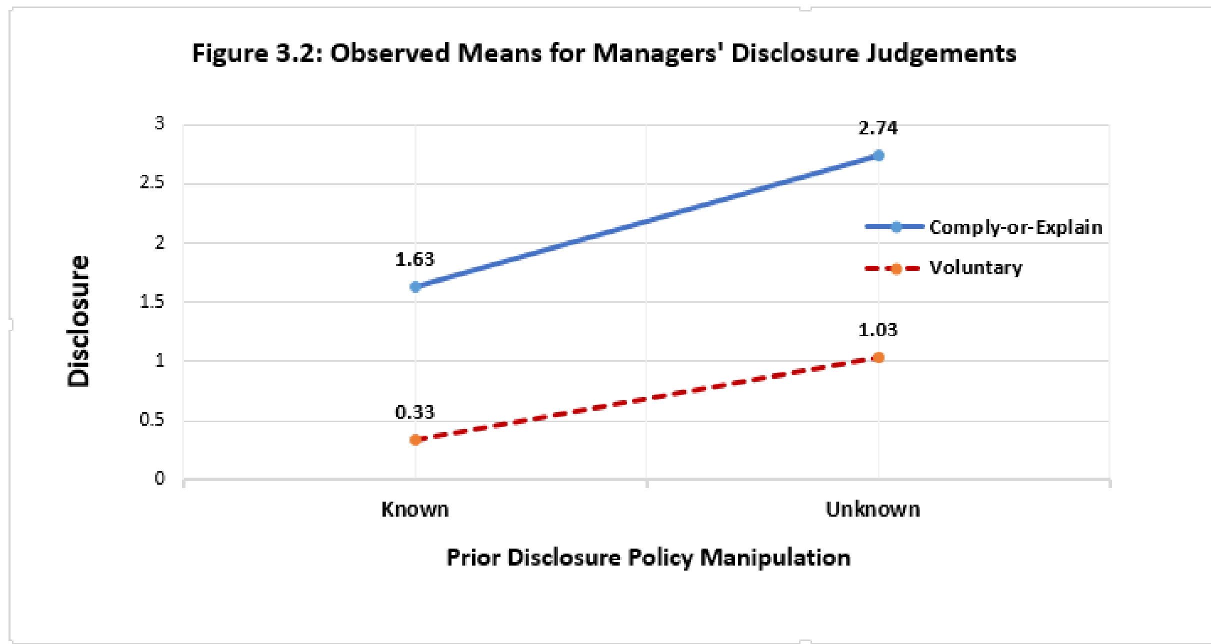
Note: Panel A and B of Table 2 summarize the descriptive statistics and two-way ANOVA results for managers' disclosure recommendations. Panel C presents the follow-up simple effect test results. I manipulate (1) whether disclosure regulation is voluntary *versus* comply-or-explain and (2) whether the firm's prior disclosure policy is known to be biased toward no disclosure *versus* unknown. The dependent variable, *DISCLOSURE*, is measured on an 11-point scale anchored from -5 = "extremely supportive of NOT disclosing" to 5 = "extremely supportive of disclosing", with the midpoint labeled "neutral".

H2 predicts an *ordinal* form of interaction between regulation type and firm's prior disclosure policy[63]. Specifically, I expect that the impact of comply-or-explain regulation on managers' disclosure recommendations is greater when the firm's prior disclosure policy is unknown than known to be biased toward no disclosure. However, the conventional ANOVA output by default provides a disordinal form of interaction. To overcome this limitation inherent in the default code, I use a planned contrast weights consistent with my predictions to calculate an ordinal interaction (Buckless and Ravenscroft 1990; Guggenmos, Piercey, and Agoglia 2018). These contrasts are –2, –2, +1 and +3, with the two voluntary regime conditions coded –2 and –2, and the comply-or-explain known and unknown conditions coded +1 and +3, respectively. These contrast codes allow me to simultaneously test a main effect of regulation type and prior disclosure policy but also my predicted ordinal interaction.

As shown in Panel C of Table 3.2, I find a significant interaction effect ($F_{1, 117} = 12.795$, $p = 0.001$), indicating that the effect of a comply-or-explain regulation on managers' disclosure recommendations is greater when the firm's prior disclosure policy is unknown than when it is known. Thus, H2 is supported. Taken together, the results support my expectation that the impact of comply-or-explain regulations on managers' disclosure judgements is moderated by the firm's prior disclosure policy[64]. Figure 3.2 presents the graph results.

[63] An ordinal interaction produces a cross-over of predicted values at the boundary or outside the range of observed values (i.e., lines do not cross), whereas a disordinal interaction shows a cross-over of predicted values within the observed range of values (i.e., lines cross-over) (Widaman et al. 2012).

[64] I repeat the ANOVA with managers' (1) financial / nonfinancial reporting experience (2) accounting and reporting knowledge (3) managerial experience and (4) familiarity with capital-market consequences of disclosure included as covariates, and my results remain unchanged.



Note: Figure 3.2 plots observed means for managers' disclosure judgements. Managers made disclosure recommendation based on (1) whether disclosure regulation is voluntary *versus* comply-or-explain and (2) whether the firm's prior disclosure policy is known to be biased toward no disclosure *versus* unknown. The dependent variable, *DISCLOSURE*, is measured on an 11-point scale anchored from -5 = "extremely supportive of NOT disclosing" to 5 = "extremely supportive of disclosing", with the midpoint labeled "neutral".

3.5.3 Mediation Analyses

The theory of reason writing suggests that the pressure to justify one's decision to others increases human cognitive process and makes people become more cautious when making decisions. Consistent with this conjecture, I anticipate managers to exhibit higher feelings of accountability in a comply-or-explain regulatory system relative to a voluntary regime which in turn drives managers' increased likelihood of disclosure. Recall that comply-or-explain regulation mandates managers to justify their decisions if they forgo disclosure. I elicit measures for managers' perceived accountability across experimental manipulations.

Table 3. 3: Descriptive statistics and ANOVA for Perceived Accountability

Panel A: Mean [Standard Deviation] for Accountability

Regulation type	**Prior disclosure policy**		
	Known	Unknown	Total
Voluntary	5.80 [2.92] n = 30	6.17 [2.55] n = 30	5.98 [2.72] n = 60
Comply-or-Explain	6.40 [2.71] n = 30	7.23 [1.61] n = 31	6.82 [2.24] n = 61
Total	6.10 [2.81] n = 60	6.70 [2.17] n = 61	6.40 [2.52] n = 121

Panel B: ANOVA

Source	**SS**	**df**	**Mean Square**	**F**	***p*-value**
Regulation	20.813	1	20.813	3.356	**0.069**
Prior Policy	10.752	1	10.752	1.734	0.191
Regulation × Prior Policy	1.594	1	1.594	0.257	0.613
Error	725.586	117	6.202		

Panel C: Planned interaction contrasts

Source	**SS**	**df**	**Mean Square**	**F**	***p*-value**
Regulation × Prior Policy Contrasts [–2, –2, +1 and +3]	11.190	1	11.190	4.692	**0.032**

Panel D: Simple main effects tests

Simple effects	**df**	**t**	***p*-value**
Effect of comply-or-explain when prior disclosure policy is known	117	0.748	0.456
Effect of comply-or-explain when prior disclosure policy is unknown	117	2.256	**0.026**
Effect of prior disclosure policy given voluntary regime	117	1.614	0.109
Effect of prior disclosure policy given comply-or-explain	117	0.533	0.595

Simple effect contrasts: ACCOUNTABILITY

- Contrast One: −1, −1, +2 and 0; Contrast Two: −1, −1, 0 and +2
- Contrast Three: −2, +1, 0 and +1; Contrast Four: 0, +1, −2 and +1
- All p-values are two-tailed.

Note: Table 3 summarizes results for managers' perceived accountability. Panel A presents the descriptive statistics and Panel B provides two-way ANOVA results. The dependent variable, *perceived accountability*, is measured on an 11-point scale anchored from 0 = "not at all accountable" to 10 = "extremely accountable".

Descriptive results in Panel A of Table 3.3 above show that the means for managers' perceived accountability are greater in the comply-or-explain conditions relative to the voluntary conditions (mean 6.82 > 5.98). The ANOVA results in Panel B of Table 3.3 show a marginal significant main effect of regulation, such that managers perceive a higher level of accountability when the disclosure regime is a comply-or-explain relative to a voluntary regime (mean 6.82 > 5.98, $F_{1, 117} = 3.356$, $p = 0.069$, two-tailed). Therefore, results support the intuition that comply-or-explain regulatory system increases decision-makers perceived accountability. Using a planned contrast weights consistent with my ordinal interaction prediction, results in Panel C of Table 3.3 show a significant interaction effect ($F_{1, 117} = 4.692$, $p = 0.032$) indicating that managers' perceived accountability is highest in the comply-or-explain unknown condition relative to the other conditions[65].

Based on these results, I perform mediation analyses using Hayes Process macro (PROCESS Model 4) to examine whether managers' perceived accountability is driving my results[66] (Hayes 2017; Preacher and Hayes 2008). Because I do not find a significant main effect of the firm's prior disclosure policy on managers' perceived accountability ($p = 0.191$), I only explore whether managers' perceived accountability (i.e., my mediator variable) mediates the impact of comply-or-explain regulation on managers' disclosure recommendations. Results depicted in Figure 3.3 show that the overall indirect effect of *Regulation* operating through the mediator *Accountability* on my dependent variable,

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[65] I use a contrast analysis of –2, –2, +1 and +3, with the two voluntary regime conditions coded –2 and –2, and the comply-or-explain known and unknown conditions coded +1 and +3, respectively. The residual analysis of the contrast is not significant ($p = 0.150$, two-tailed), indicating that the planned contrast adequately explains the variation in my accountability measure.

[66] I also performed mediation analyses based on the traditional Baron and Kenny (1986) framework and find consistent results.

Disclosure, is positive and statistically significant[67] (a x b = 0.9597; 95% bootstrapped confidence interval from 0.0107 to 1.9744). This finding indicates that managers' perceived accountability is higher when the disclosure regulation is comply-or-explain *versus* voluntary, which then drives their disclosure recommendations. Overall, the results are consistent with the theory of reason writing that the pressure to justify clause in comply-or-explain regulations affects managerial decisions of bad news disclosures.

Figure 3.3

Mediation Analysis of Regulation Type on Disclosure – No Prior Disclosure Policy Conditions

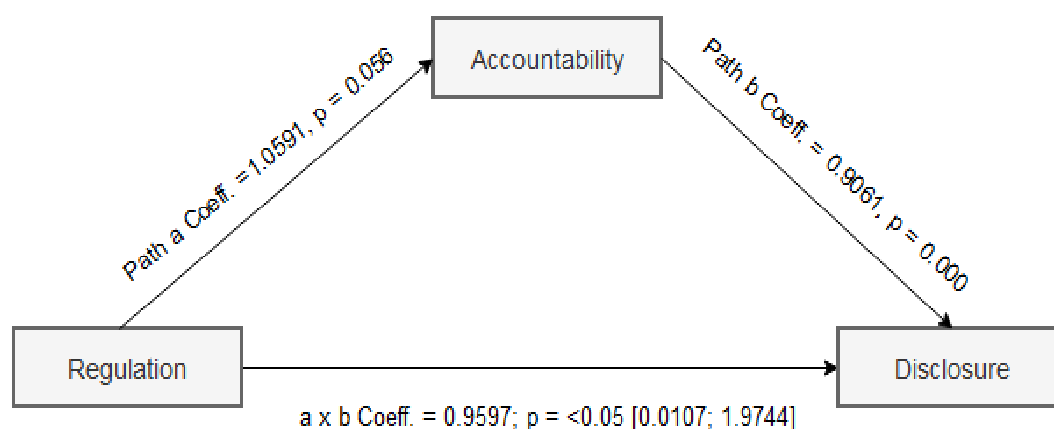

Figure 3.3 provides the output from a mediation analysis based on Hayes Process Macro (PROCESS Model 4). *Regulation* is a manipulated variable coded 1 for voluntary regime, and 2 for comply-or-explain regime. For *Accountability*, I asked participants to indicate their perceived accountability based on the disclosure requirement presented in the case. Participants responded on an 11-point scale anchored from 0 = "not at all accountable" to 10 = "extremely accountable". For *Disclosure*, I asked participants to provide a disclosure recommendation to the Board of Directors based on whether they believed disclosure of the matter is required at this time. Participants responded on an 11-point scale anchored from -5 = "extremely supportive of NOT disclosing" to 5 = "extremely supportive of disclosing", with the midpoint labeled "neutral". All p-values are two-tailed.

[67] I tested the indirect effect using non-parametric bootstrapping of 5,000 estimates. The general rule of thumb is that if the null of 0 falls between the lower and upper bound of the 95% confidence interval, it indicates that the population indirect effect contains 0 and therefore is insignificant. However, if the null of 0 falls outside the confidence interval, then the indirect effect is non-zero and thus significant. In my setting, the indirect effect of 0.9597 is statistically significant at confidence interval of 95% because the lower and upper bound of the confidence interval does not contain 0 (0.0107; 1.9744) (Hayes 2017).

3.5.4 Additional Analyses

Recent studies show that personal social preferences explain CSR investment and disclosure decisions (Church et al. 2019; Martin and Moser 2016; Riedl and Smeets 2017). Specifically, Christensen, Mackey, and Whetten (2014, p. 165) note that while CSR practices reflect corporate actions, "it is the individuals within firms who actually create, implement, sustain, or avoid such policies and act".

Because I focus on a disclosure matter involving climate change-related risk, it is possible that managers' personal views on climate change drives my results. I address this alternative explanation in two ways. First, I repeat my primary ANOVA results and include managers' personal views on climate change as a covariate[68]. Results (untabulated) reveal that my primary results are unchanged after controlling managers' personal views on climate change. Specifically, I find that the main effect of regulation remains highly significant ($F_{1, 116} = 8.377$, $p = 0.005$, two-tailed). I also find that the main effect of the firm's prior disclosure policy holds to be marginally significant ($F_{1, 116} = 3.195$, $p = 0.076$, two-tailed). In addition, I find that managers' views on climate change is highly significant ($F_{1, 116} = 15.421$, $p = 0.000$, two-tailed), indicating that managers' personal views on climate change likely plays an important role in their disclosure recommendations. Collectively, the results suggest that managers are more likely to recommend disclosure of a negative event in comply-or-explain system relative to a voluntary regime after accounting for their personal views.

Second, I consider whether managers' personal views on climate change issues *moderates* the impact of comply-or-explain regulation on managers' disclosure recommendations. Using multiple regression, I estimate the following equation:

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[68] I collected a measure of managers' personal views on climate change issues by asking to respond "I am very concerned about **climate change** related risks". Participants responded on an 11-point scale anchored from 0 = "strongly disagree" to 10 = "strongly agree". Following Church et al. (2019), I also measured participants overall CSR attitude.

$$Disclosure = \beta_0 + \beta_1 Regulation + \beta_2 Policy + \beta_3 CCViews + \beta_4 Regulation \times Policy + \beta_5 Regulation \times CCViews + \beta_5 Regulation \times Policy \times CCViews$$

Where *Regulation* is a dummy variable coded as 0 (1) for voluntary (comply-or-explain) conditions. *Policy* refers to the firm's prior disclosure policy manipulation and is a dummy variable coded 0 (1) for the known (unknown) conditions. Finally, *CCViews* is a continuous variable capturing participants' personal views on climate change issues. As in prior research, I mean centered the climate change measure to avoid multicollinearity. The regression results are summarized in Table 3.4.

The regression results are presented in Table 3.4. Consistent with my primary results, I find marginal significant main effect of regulation ($\beta_1 = 0.217$, $p = 0.063$), indicating that managers in the comply-or-explain conditions are more likely to recommend disclosure of a negative event than managers in the voluntary conditions. Results also show managers' personal views on climate change are marginally significant ($\beta_3 = 0.227$, $p = 0.091$). Finally, I find a significant interaction effect between *Regulation* and managers' personal *CCViews* ($\beta_5 = 0.294$, $p = 0.041$), indicating that comply-or-explain regulation evokes managers who are personally concerned about climate change issues to recommend climate change related risk disclosures. Taken together, these findings indicate that the impact of comply-or-explain disclosure regulations are greater in the absence of pre-existing firm or personal preferences.

Table 3. 4: Multiple Regression

Variables	*β*	t-statistics	*p*-value
Regulation	0.217	1.876	**0.063**
Policy	0.120	1.032	0.304
CCViews	0.227	1.706	**0.091**
Regulation × Policy	0.043	.300	0.765
Regulation × CCViews	0.294	2.072	**0.041**
Policy × CCViews	-0.055	-.392	0.696
Regulation × Policy × CCViews	-0.098	-.661	0.510
n = 121			
$R^2 = 25.2$			

Disclosure = $\beta_0 + \beta_1 Regulation + \beta_2 Policy + \beta_3 CCViews + \beta_4 Regulation \times Policy + \beta_5 Regulation \times CCViews + \beta_5 Regulation \times Policy \times CCViews$

Note: Table 4 summarizes multiple regression results. *Regulation* is a dummy variable coded as 0 (1) for voluntary (comply-or-explain) conditions. *Policy* refers to the firm's prior disclosure policy manipulation and is a dummy variable coded 0 (1) for the known (unknown) conditions. *CCViews* is a continuous variable capturing participants' personal views on climate change issues. The dependent variable, *Disclosure*, is measured on an 11-point scale anchored from -5 = "extremely supportive of NOT disclosing" to 5 = "extremely supportive of disclosing", with the midpoint labeled "neutral".

3.6 Conclusion

In this study, I provide theory and experimental evidence on how comply-or-explain disclosure regulations interact with the firm's pre-existing disclosure norms. Experimental results show that managers are more likely to recommend disclosure of a negative event in a comply-or-explain regulatory system than in a voluntary regime, and that this effect is more pronounced when the firm's prior disclosure policy is unknown than known. Mediation analyses further indicate that comply-or-explain disclosure regulation increases managers' perceived accountability, which in turn drives their disclosure recommendation.

Collectively, these results are consistent with the theory of reason writing that the pressure to justify decisions to others causes people to become more accountable and constrains decision bias.

The results of this study have a number of important policy and practical implications. First, I show that pre-existing views – both at the firm and personal levels – undermine the effectiveness of comply-or-explain regulations. Therefore, regulators may consider standardizing explanations that firms should provide if they forgo disclosure in comply-or-explain regulatory systems. Second, prior accounting research has long documented that private benefits of managers (e.g., stock compensation) affect managers' disclosure choices (Baginski et al. 2017; Graham, Harvey, and Rajgopal 2005; Nagar, Nanda, and Wysocki 2003). I extend this literature by showing that managers' personal social preferences also influence certain forms of managers' disclosure recommendations (Church et al. 2019; Martin and Moser 2016). This finding should be especially informative to the board of directors and audit committees that rely on the CSR and sustainability disclosure recommendations of firm managers. Finally, my study informs investors to scrutinize explanations firms provide in comply-or-explain regulatory systems.

Several caveats are in order, some of which are inherent in the nature of experimental approach. First, I focused on a *probable* disclosure event and therefore my results may not generalize to more or less probable disclosure matters. Future research may vary disclosure event probability in comply-or-explain regulatory systems. Second, my study does not consider managers' disclosure judgements where actual economic incentives exist. Third, this study does not address how the comply-or-explain compares with mandatory disclosure regime. Future research may consider whether more explicit mandatory disclosure regimes remedy the impact of the firm's prior disclosure policy. Fourth, I focused on a retail industry context. Future research could examine whether the

results hold in more environmentally sensitive industries such as extraction. Relatedly, future research may also examine whether comply-or-explain regulation affects managers' decisions to disclose negative events across different disclosure events involving matters such as board information or management compensation or are unique to a CSR setting. Finally, I focused on firm and personal preferences as moderates of the comply-or-explain regulations. Future research may want to investigate other factors that moderate or enhance the impact of comply-or-explain regulations. One important factor that can easily be manipulated in an experimental setting is the presence *versus* absence of prior history of misconduct.

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APPENDIX B – INSTRUMENT 1

SCREENING QUESTIONS

Welcome and thank you for participating in this study. Please answer the following questions as they apply to you:

1. Please select the highest academic qualification you have
   - o I have a Diploma
   - o I have a Bachelor Degree
   - o I have a Graduate Degree (Master's or higher)
   - o None of the above

[Page Break]

2. Please select one of the following:
   - o I have an MBA
   - o I do not have an MBA
   - o Other

[Page Break]

3. I have obtained my MBA in:
   - o Australia
   - o Europe
   - o United States
   - o China
   - o India
   - o Other country

PARTICIPANT INFORMATION SHEET

Project Title : Managers' disclosure choices across alternative disclosure requirements

Institution : The University of Adelaide

Approval Number : H-2019-089

Dear Participant,

You are invited to participate a research study that examines senior corporate managers' decisions of subjective disclosure matters. This study is part of my PhD research at The University of Adelaide under the supervision of Professor Paul Coram and Associate Professor Indrit Troshani. You are selected based on your experience in corporate disclosure matters and experience in discussing disclosure issues with the board of directors. **This study has important implications for corporate managers as well as regulators about existing disclosure requirements.**

You will read a case study describing a hypothetical company which includes information on a potential risk disclosure matter. You are invited to evaluate the information regarding the disclosure matter based on existing disclosure requirements and **make a disclosure recommendation to the Board**. Completion of this task should take no more than 15-20 minutes of your time.

Participation in this project is completely voluntary. If you agree to participate, you can withdraw from the study at any time prior submission. There will be no implications for withdrawal.

Your individual responses to this project will be kept strictly confidential and will only be analyzed on aggregate basis. **Please note that your completion and submission of this survey will be considered as your consent to participate in this project.**

The study has been approved by the Human Research Ethics Committee at the University of Adelaide (approval number H-2019-089). If you wish to speak with an independent person regarding concerns or a complaint, the University's policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:

:
Email: hrec@adelaide.edu.au
Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, please feel free to contact me or Professor Paul Coram (Chief Investigator) using the contact details below:

Abdifatah Ahmed Haji
Research Student

Email: abdifatah.ahmedhaji@adelaide.edu.au

Professor Paul Coram
Chief Investigator

Email: paul.coram@adelaide.edu.au

Consent Question

I have read and understood the above information about the task. Based on the information provided, do you consent to participate in this study?

- Yes I consent to participate
- No I do not consent to participate

GENERAL INSTRUCTIONS

Thank you for your consent to participate in this study. You are one of a small group of professionals involved in this important study on corporate managers' disclosure judgements. Your participation is highly valued and we thank you for your time.

We will provide you case materials of a publicly listed company and then ask you to make a disclosure judgement based on the information provided. The information provided in the case materials is not necessarily representative of the information you would receive when evaluating an actual disclosure judgement. For the purpose of this study, please make your judgements solely based on the information provided in the case materials. **There are no right or wrong answers.**

As the task requires a high level of concentration, it is very important that you complete it without interruption.

[ALL CONDITIONS]

MIA Corp

BACKGROUND INFORMATION

Assume that you are the Director of Financial Reporting of MIA Corp, a leading firm in the retail industry that sells various consumer products at competitive prices. Small and medium-sized businesses buy annual membership cards and purchase discounted products for resale. Similarly, individual consumers become members and purchase products for their own personal use. MIA Corp has over 280 stores, and is a publicly-traded company that operates throughout the United States, with a diverse investor base. MIA Corp employs over 25,000 employees, and has been in operation for 11 years.

Director of Financial Reporting

As the Director of Financial Reporting, your main responsibility is to make disclosure recommendations to the Board of Directors. This includes recommendations about **key disclosure matters**. The disclosure reports that you advise on communicate the financial and nonfinancial performance of the Company to current and prospective investors.

In this task, you will assess a specific disclosure matter that has come to the attention of management. You will then provide a recommendation to the Board of Directors based on **whether you believe the information should be publicly disclosed**.

Please note that there are **no right or wrong answers**. We are only interested in understanding the disclosure judgements of corporate managers.

In the next few screens, we will provide you selected financial data and key disclosure matter extracted from the annual performance of MIA Corp.

Please read the information provided carefully, and then answer the questions that follow.

[ALL CONDITIONS]

Performance Highlights
MIA Corp
For the Year Ended December 31, 2018

Financial Performance

The financial performance of MIA Corp for the Financial Year ending 31 December 2018 is at the upper end of what the market has predicted. The earnings per share is consistent with the forecasts of all current analysts. In addition, all key financial performance indicators such as profitability, liquidity and debts are favorable compared to MIA Corp's major competitors.

Below are the highlights of the Company's current year financial performance:

- ☐ Sales revenue increased by 11%
- ☐ Earning before tax increased by 16%
- ☐ Earnings per share (EPS) is up by 12% and meets with all analysts' forecasts
- ☐ Profitability and liquidity ratios remained relatively favorable and stable

---

At this point in time on 28 January 2019, official public announcement of the Company's financial performance has not been made, and is awaiting the approval of the Board of Directors. As the Director of Financial Reporting of MIA Corp, the Board expects your recommendations on key disclosure matters.

[CONDITION 1: Voluntary – Prior Disclosure Policy Known]

Background Information

At the last Board of Directors' meeting, the board of MIA Corp expressed its concern that management has been **too keen to disclose** information in situations where it was difficult to quantify the magnitude of the event. All the directors indicated that releasing speculative information may potentially harm the firm's share price for no underlying economic reasons.

After reading the above background information, please proceed next.

Please summarize briefly your thoughts about the **concerns of the Board** on management's past disclosure behavior in situations where it is difficult to quantify the magnitude of the event:

[Condition 1 – Continued]

Details of Specific Disclosure Matter

As part of Company-wide growth strategy, MIA Corp has actively invested and acquired business segments in important coastal areas. Following industry standards, MIA Corp conducts environmental physical risk assessments annually. On November 16, 2018, Management has received preliminary evidence suggesting that severe floods, hurricanes and other extreme weather events pose probable risks to three business segments in coastal areas. These three business segments account for a significant portion of the Company's overall sales revenue, and has contributed to 28% of the total sales revenue in 2018. However, Management is uncertain of the magnitude of the financial risks to investors or the firm's share prices.

- At this point in time, the above information is confidential and there is nothing to suggest that it will cease to be confidential.

After receiving the preliminary evidence, the Chief Executive Officer of MIA Corp has raised the matter to the chairman and it was decided to hold a Board meeting this afternoon to consider the issue.

Applicable Disclosure Regulation

Management disclosure of identified material environmental physical risks is **voluntary**. Some management **voluntarily** discloses to investors whether or not there are material environmental risks; others choose to be **silent** on such matters.

[End of Condition 1]

[CONDITION 2: Voluntary – Prior Disclosure Policy Unknown]

Details of Specific Disclosure Matter

As part of Company-wide growth strategy, MIA Corp has actively invested and acquired business segments in important coastal areas. Following industry standards, MIA Corp conducts environmental physical risk assessments annually. On November 16, 2018, Management has received preliminary evidence suggesting that severe floods, hurricanes and other extreme weather events pose probable risks to three business segments in coastal areas. These three business segments account for a significant portion of the Company's overall sales revenue, and has contributed to 28% of the total sales revenue in 2018. However, Management is uncertain of the magnitude of the financial risks to investors or the firm's share prices.

- At this point in time, the above information is confidential and there is nothing to suggest that it will cease to be confidential.

After receiving the preliminary evidence, the Chief Executive Officer of MIA Corp has raised the matter to the chairman and it was decided to hold a Board meeting this afternoon to consider the issue.

Applicable Disclosure Regulation

Management disclosure of identified material environmental physical risks is **voluntary**. Some management **voluntarily** discloses to investors whether or not there are material environmental risks; others choose to be **silent** on such matters.

[End of Condition 2]

[CONDITION 3: Comply-or-Explain – Prior Disclosure Policy Known]

Background Information

At the last Board of Directors' meeting, the board of MIA Corp expressed its concern that management has been **too keen to disclose** information in situations where it was difficult to quantify the magnitude of the event. All the directors indicated that releasing speculative information may potentially harm the firm's share price for no underlying economic reasons.

After reading the above background information, please proceed next.

Please summarize briefly your thoughts about the **concerns of the Board** on management's past disclosure behavior in situations where it is difficult to quantify the magnitude of the event:

[Condition 3 – Continued]

Details of Specific Disclosure Matter

As part of Company-wide growth strategy, MIA Corp has actively invested and acquired business segments in important coastal areas. Following industry standards, MIA Corp conducts environmental physical risk assessments annually. On November 16, 2018, Management has received preliminary evidence suggesting that severe floods, hurricanes and other extreme weather events pose probable risks to three business segments in coastal areas. These three business segments account for a significant portion of the Company's overall sales revenue, and has contributed to 28% of the total sales revenue in 2018. However, Management is uncertain of the magnitude of the financial risks to investors or the firm's share prices.

- At this point in time, the above information is confidential and there is nothing to suggest that it will cease to be confidential.

After receiving the preliminary evidence, the Chief Executive Officer of MIA Corp has raised the matter to the chairman and it was decided to hold a Board meeting this afternoon to consider the issue.

Applicable Disclosure Regulation

Management disclosure of identified material environmental physical risks is required on a **"Comply-or-Explain"** basis. The 'Comply-or-Explain' disclosure regulation contains provisions that allow publicly listed firms to deviate from recommended disclosure rules if such disclosure rules are not applicable to their operations, but mandates an **explanation** for non-disclosure.

[End of Condition 3]

[CONDITION 4: Comply-or-Explain – Prior Disclosure Policy Unknown]

Details of Specific Disclosure Matter

As part of Company-wide growth strategy, MIA Corp has actively invested and acquired business segments in important coastal areas. Following industry standards, MIA Corp conducts environmental physical risk assessments annually. On November 16, 2018, Management has received preliminary evidence suggesting that severe floods, hurricanes and other extreme weather events pose probable risks to three business segments in coastal areas. These three business segments account for a significant portion of the Company's overall sales revenue, and has contributed to 28% of the total sales revenue in 2018. However, Management is uncertain of the magnitude of the financial risks to investors or the firm's share prices.

- At this point in time, the above information is confidential and there is nothing to suggest that it will cease to be confidential.

After receiving the preliminary evidence, the Chief Executive Officer of MIA Corp has raised the matter to the chairman and it was decided to hold a Board meeting this afternoon to consider the issue.

Applicable Disclosure Regulation

Management disclosure of identified material environmental physical risks is required on a **"Comply-or-Explain"** basis. The 'Comply-or-Explain' disclosure regulation contains provisions that allow publicly listed firms to deviate from recommended disclosure rules if such disclosure rules are not applicable to their operations, but mandates an **explanation** for non-disclosure.

[End of Condition 4]

QUESTIONS

[Question: Disclosure Decision]

1.1 Please now make a judgement about whether MIA Corp should disclose information about the environmental risk matter to investors [**Free to re-read the above information**].

On the scale below, please provide to the Board of Directors a recommendation on whether you believe disclosure on the above risk matter is required at this time.

Extremely **supportive of NOT** disclosing					**Neutral**					Extremely **supportive of disclosing**
-5	-4	-3	-2	-1	0	1	2	3	4	5

1.2 In the space provided below, please briefly write a narrative statement to help the Board explain to investors why disclosure or non-disclosure is appropriate at this time as you would in the real world:

Questions: Process Variables

1.1 Given the disclosure requirement presented in the case, to what extent do you feel **accountable** to disclose the specific risk matter in the case?

		Not at all accountable										Extremely accountable
		0	1	2	3	4	5	6	7	8	9	10

1.2 Given the disclosure requirement presented in the case, to what extent did the **disclosure requirement** described in the case influence your disclosure recommendation?

		Not at all										Extremely
		0	1	2	3	4	5	6	7	8	9	10

1.3 For the disclosure recommendation you provided, please indicate how much **confidence** you have in that recommendation on the scale below:

		Completely Unconfident										Completely Confident
		0	1	2	3	4	5	6	7	8	9	10

MANIPULATION CHECKS

Please answer the following questions about the case materials, to the best of your recollections.

1. Which of the following describes the current disclosure requirement relating to environmental physical risk disclosure as mentioned in the case?
   - o Disclosure requirement is **Voluntary**
   - o Disclosure requirement is **Mandatory**
   - o Disclosure requirement is a "**Comply-or-Explain**"

2. In the case, the Board expressed concern that management had been:
   - o Too keen to disclose information that was difficult to quantify
   - o No concern was mentioned

3. MIA Corp's financial performance was:
   - o Favorable
   - o Unfavorable
   - o Financial performance of MIA Corp was not mentioned in the case

Demographics and Post-Task Questions

Please answer the following questions to help us better understand why your responses might be different from those of other participants in this study:

1. With which gender do you primarily identify?

- Male
- Female

2. What is your native language?

- English
- Other language

3. How old are you?

Please type here ___________ years

4. How many years of full time working experience do you have?

Please type here ___________ years

5. How many years of full time **managerial experience** do you have?

Please type here ____________ years

6. Please indicate your level of knowledge in the following areas:

		Extremely low					Fair					Extremely high
	My knowledge of how financial reports represent business activities is:	0	1	2	3	4	5	6	7	8	9	10
	My knowledge of the meaning and interpretation of financial statements is:											
	My knowledge of non-financial reporting is:											
	My overall knowledge of existing disclosure rules is:											

7. How many college-level Accounting courses have you taken?

____

8. How many college-level Finance courses have you taken?

____

9. How many times have you been directly involved in a company's **financial reporting** process?

- 0
- 1 – 5 times
- 6 – 10 times
- More than 10 times

[Page Break]

10. How many times have you been directly involved in a company's **non-financial reporting** process?

- 0
- 1 – 5 times
- 6 – 10 times
- More than 10 times

[Page Break]

11. Please indicate your level of agreement or disagreement with the following statement:

		Strongly Disagree										Strongly Agree
	I strongly believe that companies should sacrifice profitability for **environmental** causes	0	1	2	3	4	5	6	7	8	9	10

[Page Break]

12. Please indicate your level of agreement or disagreement with the following statement:

		Strongly Disagree									Strongly	Agree
	I am very concerned about **climate change** related risks	0	1	2	3	4	5	6	7	8	9	10

[Page Break]

13. Please indicate if you are strongly socially Liberal (1), Neutral (6), or strongly socially Conservative (11).

		Strongly Liberal					Neutral			Strongly Conservative		
	"I identify myself as"	1	2	3	4	5	6	7	8	9	10	11

[Page Break]

14. Please select the industry or industries in which you have significant working experience?

- Agriculture / Food
- Chemical / Pharmaceutical industry
- Computer / Software
- Construction
- Retail / Consumer Products
- Energy / Utilities
- Financial services / Insurance
- Telecommunications
- Manufacturing
- Mass Media
- Other (Please specify)

15. What is the size of your current company?

- Small firm
- Medium-sized firm
- Large corporation

[Page Break]

16. Please select one of the following options if you have professional accounting or finance qualification:

- CPA
- ACCA
- CIMA
- CFA
- Other (Please specify)
- None

[Page Break]

17. Please indicate your level of agreement or disagreement with the following statements

	Strongly Disagree									Strongly Agree
Disclosure of firm-specific risks influence analysts' earnings forecasts	0	1	2	3	4	5	6	7	8	9	10
Disclosure of firm-specific risks hurt the company's stock price											
Non-disclosure of probable risks negatively affect companies' transparency reputation											
Non-disclosure of probable risks negatively affect management credibility											

END

Thank you very much for your participation.

CHAPTER 4 – STUDY THREE

AUTHORSHIP DETAILS

Statement of Authorship

Title of Paper	Effects of Integrating CSR Information in Financial Reports on Investors' Firm Value Estimates
Publication Status	☐ Published ☐ Accepted for Publication ☑ Submitted for Publication ☐ Unpublished and Unsubmitted work written in manuscript style
Publication Details	• Presented at Experimental Accounting Workshop at the University of Melbourne – June 2019 • Presented at AFAANZ Conference, Brisbane – July 2019 • Presented at Brown Bag Workshop at the University of Adelaide – May 2017 • Currently preparing for 2nd Round submission at a leading accounting journal

Principal Author

Name of Principal Author (Candidate)	Abdifatah Ahmed Haji		
Contribution to the Paper	I reviewed the literature and relevant theories, identified the research question, designed the experiment, collected and analyzed experimental data and contributed to write up of the paper.		
Overall percentage (%)	70		
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.		
Signature		Date	25 March 2020

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

i. the candidate's stated contribution to the publication is accurate (as detailed above);
ii. permission is granted for the candidate in include the publication in the thesis; and
iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Paul James Coram		
Contribution to the Paper	Paul has substantially contributed to the development of the research question, hypotheses development and experimental design as well as reporting research findings. Contribution Percentage (%): 15		
Signature		Date	9/4/2020

Name of Co-Author	Indrit Troshani		
Contribution to the Paper	Indrit has substantially contributed to the development of the research question, hypotheses development and experimental design as well as reporting research findings. Contribution Percentage (%): 15		
Signature		Date	30/03/2020

Please cut and paste additional co-author panels here as required.

Effects of Integrating CSR Information in Financial Reports on Investors' Firm Value Estimates

Abstract

We examine whether integrating corporate social responsibility (CSR) performance measures in financial reports, relative to reporting in separate standalone CSR reports, attenuates or exacerbates effects of this information on investors' firm value estimates. Using an experiment, we first establish that CSR performance measures are incrementally informative to investors, such that investors derive significantly higher (lower) firm value estimates in response to positive (negative) CSR measures relative to NO CSR control condition. Central to our study, we find that CSR measures have greater impact on investors' firm value estimates when reported in a separate report relative to when integrated in a financial report. In addition, we find that more investors misclassified CSR information as assured when integrated in a financial report relative to when reported in a separate report. Misclassifying investors rated credibility of CSR information higher and derived higher firm value estimates compared to investors who correctly classified this information as non-assured. Overall, our results identify potential costs of integrated reporting, and should be informative to global regulators as they consider alternative CSR reporting frameworks.

Keywords: Corporate Social Responsibility; Disclosure; Integrated Reporting; Investors; Firm Value Estimates

4.1 Introduction

Global firms increasingly provide corporate social responsibility (CSR) disclosures (KPMG 1999, 2017; Stolowy and Paugam 2018). For example, KPMG (2017) survey reports that 75% of 4,900 leading firms in 49 countries and 93% of the largest 250 global firms provide CSR disclosures. Survey evidence also indicates that both professional and retail investors consider CSR performance measures in their investment decisions (Amel-Zadeh and Serafeim 2018; Cohen et al. 2011). In a recent survey by the Chartered Financial Analyst (CFA) Institute, 73% of 1,588 institutional investors stated that they take CSR matters into account in their investment decisions, and 59% of those investors integrate CSR indicators into the entire investment decision-making process (CFA 2017). Consistent with growing interest from investors, 56% of all shareholder proposals also focused on CSR issues in 2017, up from 51% in 2016 (ProxyMonitor 2017). Further, regulators in several countries have recently mandated CSR reporting and specific reporting frameworks for all or a subset of listed firms[69].

Prior accounting research documents that CSR disclosures have important capital-market and economic consequences (Dhaliwal et al. 2012; Plumlee et al. 2015; Richardson and Welker 2001). More recent archival studies find that integrating CSR information in financial reports has incremental capital-market and real effects (Barth et al. 2017; Downar et al. 2019). This latter literature suggests that integrating CSR information in financial reports generates capital-market and real effects via increased dissemination of CSR information to wider audience (Christensen et al. 2017). However, recent experimental

[69] Regulators in Europe, the UK, China, South Africa and India among other countries have recently mandated CSR for all or a subset of listed firms. However, other regulators such as the Securities and Exchange Commission (SEC) remain critical of mandating CSR reporting. For example, the SEC (2016, p. 213) asked several policy questions on CSR reporting including: "If we were to adopt specific disclosure requirements involving sustainability or public policy issues, how could our rules elicit meaningful disclosure on such issues"?

studies highlight potential costs of integrated reporting on different stakeholders such as investors and managers (Bucaro, Jackson, and Lill 2019; Johnson 2019).

In this study – to shed more light on the value of integrated reporting[70] – we use a controlled experiment with investors to examine how integrating CSR information in financial reports affects investors' firm estimates. Specifically, we examine whether the impact of positive *versus* negative CSR measures (hereafter, CSR performance valence) on investors' firm value estimates is contingent on whether this form of information is reported in an integrated report *versus* separate report (hereafter, report format). We also examine whether report format affects investors' perceived credibility of CSR information.

Investigating the report format effects of CSR information on investors' judgements is important for several reasons. First, there is currently significant interest across the world by standard setters and regulators into integrated reporting. For example, regulators in South Africa have already mandated integrated reporting for listed firms since 2010, while the UK's Financial Reporting Council (FRC) explicitly mandates disclosing CSR indicators such as carbon emissions in annual reports (FRC 2018). In addition, regulators in the EU and Australia state that firms can satisfy CSR reporting requirements by issuing integrated reports or separate CSR reports. In addition, the SEC is currently seeking public feedback on the question of "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC 2016, p. 214). Specifically, the SEC is concerned whether adopting specific requirements for CSR disclosures would cause registrants to disclose information that is not material to investors (SEC 2016). Our primary motivation stems from these current policy questions on CSR reporting frameworks.

[70] Throughout the paper and for the purposes of our experimental manipulations, we use 'integrated reporting' to refer to the combination of financial and CSR performance measures in one report. We recognize that while our conceptualization of integrated reporting may only capture certain aspects of the integrated reporting framework proposed by the International Integrated Reporting Council (IIRC 2013), it is nonetheless consistent with the spirit of integrated reporting.

Second, CSR disclosures are more "imagery-provoking" and vivid than financial disclosures, and are thus more likely to trigger unintentional affective reactions from investors (Elliott et al. 2014; Guiral et al. 2019). As such, firm managers may strategically integrate positive CSR disclosures in financial reports to influence investors' firm valuations[71]. Finally, assurance on CSR information is voluntary. It is possible that combining audited financial and unaudited CSR information in one report may cause investors to misclassify unaudited information as audited (Hodge 2001).

We draw on "category construction" theory in psychology that suggests categories can cause people to adopt a unidimensional or multidimensional perspective (Ahn and Medin 1992; Spalding and Murphy 1996). Specifically, Spalding and Murphy (1996) contend that categories trigger people to treat items of the same category as equivalent, even though they are clearly different. Consistent with this conjecture, Bucaro, Jackson, and Lill (2019) find that reporting financial and CSR measures in two separate reports led investors to adopt a multidimensional perspective that included a financial dimension, and also a social responsibility dimension, whereas integrated reporting caused investors to adopt a unidimensional perspective of financial information only. Building on this background, we posit that combining financial and CSR information in one report diminishes the vividness of CSR information, whereas separate reporting makes CSR information more salient. As such, we predict that separate reporting causes stronger reactions from investors, such that investors' firm value estimates are higher (lower) when positive (negative) CSR information is reported in a separate report compared to an integrated report. Importantly, to the extent that integrated reporting evokes investors to adopt a unidimensional perspective and treat items of the same category as equivalent

[71] Recent survey evidence indicates that firms increasingly integrate a wide variety of CSR performance measures in their regulated financial reports (Cohen et al. 2012; KPMG 2017).

(Bucaro, Jackson, and Lill 2019; Spalding and Murphy 1996), we hypothesize that integrated reporting (relative to separate reporting) causes investors to treat non-assured CSR information as assured. Consequently, we predict that misclassifying investors derive higher CSR information credibility and firm value assessments (Hodge 2001).

To test our predictions, we conduct a 2 (CSR performance valence) x 2 (report format) + 1 (control condition) between-participants experiment with 164 participants serving as nonprofessional investors. We design an experimental scenario where participants assumed the role of a prospective investor and make a firm value estimate based on excerpts of the company's annual performance. We manipulate CSR *performance valence* at two levels: positive versus negative. In the positive condition, all CSR performance indicators have improved over time, whereas in the negative condition – the firm's CSR performance have deteriorated. We also manipulate *report format* at two levels: integrated *versus* separate report. In the integrated report condition, participants viewed financial and CSR information in one report. In the separate report condition, participants first viewed financial data, answered few questions and then read CSR information in a separate report. We include a control condition that received background and financial information only.

Results are generally consistent with our predictions. First, we find that investors' derived significantly higher (lower) firm value estimates in response to positive (negative) CSR information relative to a no CSR control condition. Second, we find that separate reporting causes stronger reactions from investors, such that their firm value estimates are more negative when poor CSR information is reported in a separate report relative to an integrated report. However, investors who consider *positive* CSR information derive comparable firm value estimates, regardless of reporting format of this information. Mediation analyses further indicate that separate reporting increases investors' perceived

management credibility and triggers investors' stronger reactions to separate reporting. Finally, as predicted - we find that more investors misclassified CSR information as assured when integrated in a financial report relative to a separate report. Consequently, misclassifying investors rated CSR disclosure credibility higher and derived higher firm value estimates compared to investors who correctly classified this information as non-assured. Collectively, our findings highlight potential costs of integrated reporting and suggest that integrating CSR measures in financial reports diminishes CSR performance and leads investors to misclassify CSR measures as assured.

We contribute to the broader CSR literature, integrated reporting research and policy questions. *First*, we contribute to the broader CSR literature that documents CSR reporting has important capital-market and economic benefits (Clarkson et al. 2013; Dhaliwal et al. 2011; Plumlee et al. 2015). We extend this line of literature by considering whether *variations* in CSR reporting attenuate or exacerbate benefits of CSR disclosures. Our experimental evidence indicates that the incremental effects of CSR information is contingent on how investors receive this form of information, such that CSR information has a greater impact on investors' judgements when provided in a separate report relative to an integrated report.

Second, we add to a growing stream of experimental and archival studies that examine capital-market and behavioral effects of integrated reporting (Barth et al. 2017; Bucaro, Jackson, and Lill 2019; Green and Cheng 2019; Johnson 2019; Reimsbach, Hahn, and Gürtürk 2018). Specifically, our study is positioned within a recent stream of experimental studies that provide evidence on how integrated reporting affects managers' investment and strategy evaluations (Esch, Schnellbächer, and Wald 2019; Johnson 2019), auditors' materiality assessments (Green and Cheng 2019) and investors' judgements (Bucaro, Jackson, and Lill 2019; Reimsbach, Hahn, and Gürtürk 2018). Our study most

closely relates to a concurrent paper by Bucaro, Jackson, and Lill (2019) who find that report format affects investors' willingness to invest. We complement their work by considering how report format affects investors' firm value estimates[72]. Importantly and unlike all related studies, our experimental design includes a no CSR disclosure condition which provides a better control and allows us to determine the incremental effects of CSR performance measures on investors beyond CSR reporting format effects. Finally, we provide first evidence on whether integrating CSR information in financial reports leads investors to misclassify CSR information as assured, and how this subsequently affects their perceived information credibility and firm value estimates.

Finally, our study has important policy implications. As CSR reporting regulations increase internationally (Ho 2017), reporting format of these matters will likely carry greater importance in the future. As noted above, global regulators are currently considering possible implications of integrating CSR performance measures in regulated financial reports (SEC 2016; FRC 2018). Beyond CSR reporting regulations, a number of nonprofit organizations such as the IIRC continue to promote integrated reporting (IIRC 2013, 2017). Similarly, the Sustainability Accounting Standards Board (SASB) published a set of industry-specific standards in 2018 to help investors and companies identify and integrate financially-material CSR matters (SASB 2018). Our study is timely and should be informative to the SEC's inquiry and other global regulators as well as interest groups as they consider alternative CSR reporting frameworks. Specifically, as more and more firms incorporate non-assured CSR performance measures in their financial reports or obtain assurance on 'selected' CSR indicators, regulators may want to mandate firms to

[72] Firm valuation is a fundamentally different concept from investors' willingness to invest chiefly because investors are likely to consider components of firm value (e.g., liquidity, expected cash flow etc.) in response to CSR disclosures. Therefore, investors' firm value estimates reflect their assessment of a firm's long-term prospects.

explicitly label their CSR measures as ‘non-assured’ or ‘assured’ to mitigate investors potentially misclassifying these non-assured CSR measures as assured.

The paper proceeds as follows. The ensuing section discusses background of recent CSR trends, and reviews related literature. Section 3 describes our theory and develops research hypotheses. In Section 4, we describe our experiment and other research design choices. Section 5 presents the results as well as additional analyses. Section 6 concludes the study, with a discussion of implications to theory and practice.

4.2 Background and Related Literature

4.2.1 CSR Reporting Trends

Over 60 countries have recently mandated CSR reporting for all or a subset of listed firms (Ho 2017). The EU, UK, China, India and South Africa among other countries have all mandated CSR reporting. However, there is considerable variation in how companies report their CSR performance measures. For example, companies either integrate CSR information in their financial reports or report in separate standalone reports (KPMG 2017).

To this end, several countries such as South Africa, the UK and Brazil began to standardize CSR reporting by mandating firms to integrate their CSR performance measures into financial reports. Other countries such as China and Singapore mandate the publication of standalone CSR reports. Regulators in other jurisdictions such as the EU and Australia are flexible about CSR report format. For instance, the revised corporate governance principles issued by the Australian Securities Exchange (ASX), specifically Principle 7.4, states that firms may meet CSR reporting requirements by issuing an integrated report or a separate CSR report (ASX 2019). Similarly, an EU commission recommended the integrated reporting framework proposed by the IIRC among other alternative reporting frameworks such as the Global Reporting Initiative (GRI) and SASB

standards (EU-Commission 2017). However, the SEC is currently seeking public opinion on several policy questions including "If we propose line-item disclosure requirements on sustainability or public policy issues, which, if any, of these frameworks should we consider in developing any additional disclosure requirements?" (SEC 2016, p. 214).

In this study, we experimentally examine whether and how integrating financial and CSR performance measures in one report *versus* reporting in separate reports affects investors' reactions to CSR information. In the next section, we review relevant archival and experimental research.

4.2.2 Related Literature

Prior research provides evidence that CSR information is informative to capital-markets and investors (Clarkson et al. 2013; Dhaliwal et al. 2011; Matsumura, Prakash, and Vera-Muñoz 2014). Specifically, capital-markets reward (penalize) firms associated with positive (negative) CSR performance[73] (Klassen and McLaughlin 1996; Plumlee et al. 2015). Experimental studies in controlled settings provide corroborating evidence and show that investors incorporate CSR information in their valuation judgements (Chan and Milne 1999; Milne and Patten 2002; Wang and Tuttle 2014), and adjust their firm value estimates in response to both positive and negative CSR indicators (Coram, Monroe, and

[73] However, it is important to note that other studies find that CSR information is not informative to capital-markets, and has no impact on firm value (e.g., Cho et al. 2015). Further, the link between CSR reporting and components of firm value (e.g., cost of capital/ debt) is less clear-cut. For example, several studies such as Dhaliwal et al. (2011) and Plumlee et al. (2015) find a *negative* association between CSR reporting and cost of capital while Richardson and Welker (2001) and Magnanelli and Izzo (2017) find a contrasting *positive* association between CSR reporting and cost of capital and cost of debt, respectively. Further, Clarkson et al. (2013) find no association between voluntary CSR disclosures and cost of capital, but show a positive association between CSR disclosure and firm value.

Woodliff 2009; Elliott et al. 2014,). However, prior research has not considered reporting format effects of CSR information[74].

Recent studies find that integrated reporting has important capital-market benefits such as reduced information asymmetry and increased market liquidity (Barth et al. 2017; Lee and Yeo 2016). A separate line of studies documents real effects of integrated reporting, such that firms required to disclose their CSR records in financial reports improve their CSR performance (Christensen et al. 2017; Downar et al. 2019). A likely explanation of the capital-market and real effects of integrated reporting is that integrating CSR information in financial reports increases dissemination of this information to wider audience, compared to when this form of information is reported in a separate report (Christensen et al. 2017).

However, experimental studies highlight potential costs of integrated reporting on managers' operational decisions (Esch, Schnellbächer, and Wald 2019; Johnson 2019), auditors' materiality assessments (Green and Cheng 2019) and investors' investment judgements (Bucaro, Jackson, and Lill 2019; Reimsbach, Hahn, and Gürtürk 2018). For example, Johnson (2019) conducted an experiment with managers and finds that CSR report format and audience affect managers' resources allocations. Specifically, he finds that when the disclosure audience is investors-only and CSR information is integrated in a financial report, managers allocated more capital to maximize *financial* benefits rather than *social* benefits. However, managers allocated more capital that maximize *social* benefits when CSR information is disclosed in a separate report and the disclosure audience is disparate stakeholders.

[74] Several studies explore CSR performance and disclosure scores across alternative reporting outlets (e.g., de Villiers and Van Staden 2011; Mahoney et al. 2013). For example, Mahoney et al. (2013) find that U.S. firms issuing voluntary standalone CSR reports have higher CSR performance scores relative to control firms that do not issue standalone reports, indicating firms with superior CSR records issue standalone CSR reports to signal their superior CSR performance.

Of particular relevance to our investigation, Reimsbach, Hahn, and Gürtürk (2018) used an experiment with professional investors and find an interaction between report format and assurance of CSR information. Specifically, they report that - in the case of non-assured CSR information - integrated reporting positively affected professional investors' evaluation of CSR performance, resulted in a higher weighting of this information, and led to higher firm value estimates. In another experiment with professional investors, Arnold, Bassen, and Frank (2018) find that investors' firm value estimates are *higher* when positive CSR information is integrated with financial information, but investors who considered negative CSR information in a separate report arrived at the *same* valuation as those receiving CSR in an integrated report.

Bucaro, Jackson, and Lill (2019) focused on a different group of nonprofessional investors and examine effects of CSR information in an integrated or separate report on investors' willingness to invest. In contrast to Reimsbach, Hahn, and Gürtürk (2018), they find that CSR information has *greater* influence on investors' willingness to invest when this information is reported in a separate report relative to an integrated report. Their results persist both for positive and negative CSR information, and is driven by investors' increased feelings of CSR disclosure relevance being greater when this information is reported in a separate report.

Overall, the experimental studies provide important insights on how integrated reporting affects various stakeholder groups. Our study adds to this line of literature and examines how CSR performance valence and report format affect nonprofessional investors' firm value estimates. Unlike Reimsbach, Hahn, and Gürtürk (2018) who used a group of professional investors, we focus on nonprofessional investors' reactions to

integrated reporting[75]. Our study is also different from Bucaro, Jackson, and Lill (2019) who examined CSR reporting format effects on investors' willingness to invest. Instead, our focus is on CSR reporting format effects on investors' firm value estimates. Further, different to both of these studies, we also compare the incremental effects of CSR disclosures to a control group who were provided with only financial information. Finally, we provide new evidence on whether integrating CSR information in financial reports leads investors to misclassify non-assured CSR information as assured, and the subsequent effects on investors' perceived disclosure credibility and firm value estimates. In doing so, we respond to recent calls by De Villiers, Venter, and Hsiao (2017) who call for experimental studies that examine how integrated reporting affects investors' judgements.

4.3 Theory and Hypotheses

4.3.1 Category Construction Theory

Category construction theory suggests that categories trigger people to adopt a unidimensional or multidimensional perspectives (Medin, Wattenmaker, and Hampson 1987; Spalding and Murphy 1996). Experiments involving sorting tasks show that people fail to organize items into their natural categories (i.e., family resemblance categories) (Medin, Wattenmaker, and Hampson 1987). That is, categories trigger people to adopt a unidimensional perspective, and treat items of the same category as identical although they are clearly different (Spalding and Murphy 1996). However, people easily identified family resemblance and adopted a multidimensional perspective when additional conceptual

[75] Prior accounting research demonstrates that professional and nonprofessional investors use different valuation and information processing techniques (see, e.g., Elliott 2006; Frederickson and Miller 2004). Specifically, nonprofessional investors are more vulnerable to variations in disclosure reports, and are likely subject to unintentional cognitive effects of disclosure reports than sophisticated investors (Elliott 2006; Maines and McDaniel 2000). Further, nonprofessional investors form a significant portion of the investing community (Cohen et al. 2011), and is a group of investors that regulators in many countries are increasingly concerned about given increasing complexity in corporate reports (SEC 1998, 2016).

knowledge making the family resemblance salient is provided (Ahn and Medin 1992; Medin, Wattenmaker, and Hampson 1987).

In our setting where investors make a firm valuation, we posit that integrated reporting triggers investors to adopt a unidimensional perspective, such that investors treat financial and CSR performance measures as equivalent (Bucaro, Jackson, and Lill 2019). As such, the vividness of CSR information decreases in an integrated reporting format, and a financial perspective prevails given the valuation task. However, reporting financial and CSR performance measures in two separate reports evokes investors to adopt a multidimensional perspective involving both a financial perspective and a CSR perspective. Given that CSR information is imagery-provoking and emotionally sensitive (Elliott et al. 2014), we posit that depicting CSR information in a separate standalone report as opposed to an integrated report makes CSR information salient.

Based on the above discussion, we predict that reporting CSR measures in a separate report relative to an integrated report has a greater impact on investors' firm value estimates. Therefore, we pose the following hypotheses:

H1a: Investors who view *positive* CSR information in a separate report will derive higher firm value estimates relative to investors who receive the same information in an integrated report.

H1b: Investors who view *negative* CSR information in a separate report will derive lower firm value estimates relative to investors who receive the same information in an integrated report.

4.3.2 CSR Information Classification

Prior experimental accounting research has focused on whether the presence or absence of CSR assurance affects investors' perceived credibility and investment judgements (Cheng, Green, and Ko 2015; Coram, Monroe, and Woodliff 2009; Kuruppu and Milne 2010; Reimsbach, Hahn, and Gürtürk 2018). In this study, we examine whether report format of

CSR information affects investors' perceived credibility of CSR information. Specifically, we assess whether integrating CSR information in financial reports increases investors' perceived credibility of this information. We study one possible channel in which this occurs, that is whether investors misclassify non-assured CSR information as assured when integrated in a financial report relative to when reported in a separate CSR report. In a financial accounting experiment, Hodge (2001) finds that investors who viewed hyperlinked audited and unaudited financial information misclassified more unaudited information as audited and rated the credibility of the unaudited information higher than did investors who viewed hardcopy materials. In his study, the investors who assessed the unaudited financial information as more credible also judged the firm's earnings potential to be higher.

In an integrated reporting setting, Reimsbach, Hahn, and Gürtürk (2018) argue that investors' *higher* firm value estimates in response to non-assured CSR information in an integrated report may be due to a halo effect stemming from combining CSR information with audited financial information. However, their study does not collect measures on whether investors misclassified non-assured CSR information as assured. Other recent experimental studies did not also consider whether integrated reporting leads investors to misclassify CSR information as assured (e.g., Bucaro, Jackson, and Lill 2019). In this study, we provide direct evidence on whether integrated reporting relative to separate reporting leads more investors to misclassify non-assured CSR information as assured[76].

To the extent that integrated reporting causes investors to adopt a unidimensional perspective and treat items of the same category as identical (Bucaro, Jackson, and Lill

[76] Assurance on CSR information is voluntary in most jurisdictions, and there is no specific mandate that requires companies to disclose whether all or specific CSR indicators are assured or non-assured. For example, KPMG (2017) survey shows that 67% of top 250 global companies, and 45% of 4,900 leading worldwide firms obtained independent assurance for their CSR data in 2017, up from 63% and 42% in 2015 respectively.

2019; Spalding and Murphy 1996), we contend that integrated reporting (relative to separate reporting) causes more investors to misclassify CSR information as assured. Consequently, we predict that misclassifying investors will rate CSR disclosure credibility higher, and derive significantly higher firm value estimates relative to investors who correctly classify this information as non-assured (Hodge 2001). Our hypotheses are summarized as follows:

H2a: More investors will misclassify non-assured CSR information as assured when this information is integrated in a financial report relative to when reported in a separate report.

H2b: Misclassifying investors will rate CSR disclosure credibility higher and derive higher firm value estimates relative to investors who correctly classify this information as non-assured.

4.4 Experimental Method

4.4.1 Experimental Design and Participants

We employ a 2 × 2 + 1 between-participants experiment to test our predictions. We first manipulate CSR performance valence type at two levels (i.e., positive *versus* negative). Second, we manipulate report format at two levels, and vary whether CSR measures are integrated in a financial report or reported in a separate CSR report. We include a no CSR disclosure control condition that receives company background and financial information only. Importantly, we hold the underlying economics of the firm and other key features of the firm constant across conditions to isolate reporting format effects on investors' judgements to both positive and negative CSR performance measures.

We utilized Amazon Mechanical Turk (hereafter MTurk) to recruit participants serving as nonprofessional investors in exchange for US$2 fixed payment. Recently, MTurk has become a reliable recruitment source of reasonably informed investor groups

for behavioral accounting studies (Buchheit et al. 2017). Importantly, Farrell, Grenier, and Leiby (2017) show that online workers including those in MTurk exert a comparable effort as participants in traditional labor markets, even under a substantially lower pay levels. A unique feature of the MTurk platform is that participants can be previewed using their pre-registered profiles[77]. To rule out effects of institutional setting and further enhance data quality, we rely on stringent pre-registered profiles of our participants. For example, we required participants to have a U.S. Graduate Degree; live in the U.S.; and have an MTurk performance Approval Rate of 98% or above.

Following Koonce, Miller, and Winchel (2015), we used screening questions to ensure that the participants of our study have reasonable accounting knowledge and investing experience necessary for the experimental task (Libby, Bloomfield, and Nelson 2002). In addition to the MTurk filters described above, we required participants to have (1) taken at least two college-level accounting and/or finance courses and (2) purchased or sold individual stocks at least two times in the past. A total of 337 individuals have attempted our survey link and we retained 178 participants (or approximately 53%) who met our screening requirements. The experiment was administered via Qualtrics software, which randomly allocated participants that met the criteria to one of the five experimental conditions[78].

All participants are aged 25 or above, 98% self-reported that their native language is English, and 65% are male. Further, 88% stated that they have more than 5 years of

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[77] MTurk recruits diverse “Workers” interested in participating online studies. To be selected, potential Workers must fill in an initial registration questionnaire which collects their profile attributes such as sex, age, country of residence, educational background among others. MTurk in turn combines Worker attributes and allows Requesters to select potential participants based on their profile (known as Qualifications). Further, MTurk records performance levels of Workers (e.g., Masters) so Requesters can select Workers that meet or exceed certain levels of performance for their research.

[78] Approval to use human subjects was granted by The University of Adelaide’s Office of Research Ethics, Compliance and Integrity.

professional working experience; 98% (65%) stated that they have read financial (CSR) reports at least once in the past. On average, participants took approximately 12 minutes to complete the task, thereby their participation fee translates to US$10 per hour (about AU$15 at the time) which is comparable to recent studies using MTurk participants (e.g., Bucaro, Jackson, and Lill 2019). Table 4.1 below summarizes demographical information of the participants.

Table 4. 1: Descriptive statistics for participants

	Frequency	Percent
Final number of participants	164	100
Investing experience		
Number of participants with investing experience	157	95.7
Age distribution of participants		
o 18-24	0	0
o 25-34	51	31.1
o 35-44	59	36.0
o 45-54	33	20.1
o 55 or Older	20	12.2
Number of times participants assessed financial reports		
o This is my first time	4	2.4
o 1 – 5 times	45	27.4
o 6 – 10 times	42	25.6
o More than 10 times	72	43.9
Number of times participants assessed CSR reports		
o This is my first time	62	37.8
o 1 – 5 times	71	43.3
o 6 – 10 times	18	11.0
o More than 10 times	12	7.3
Participants' full time working experience (in years)		
o 0	0	0
o 1-5	15	9.1
o 6-10	32	19.5
o 11-15	28	17.1
o More than 15 Years	88	53.7

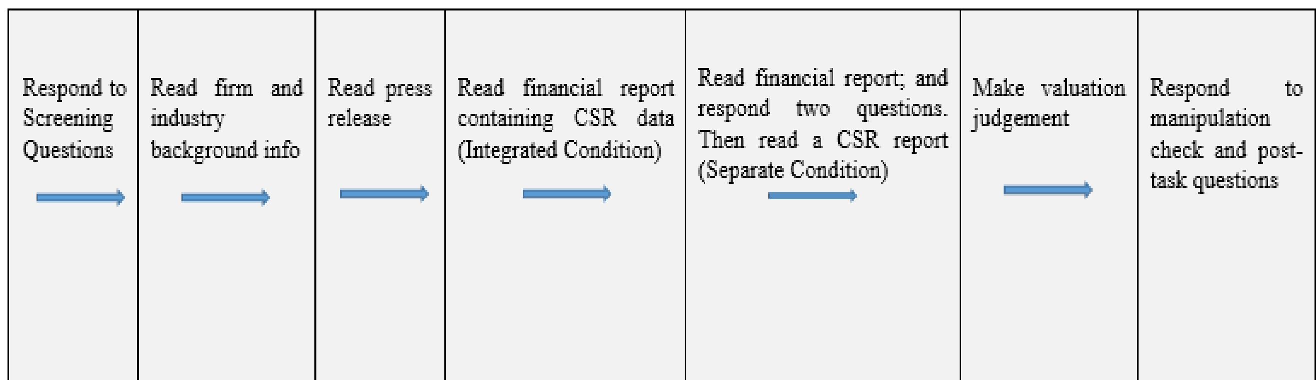
Note: Table 4.1 presents the demographic profile of the investors who participated in the experiment. One participant did not provide their demographic data and therefore the above Table is based on the demographic profile of 163 participants.

4.4.2 Case Material and Procedures

Participants first answered screening questions to verify their accounting knowledge and investing experience, as described above. All participants began the experiment by reading through background information and financial performance of Apax Limited., a hypothetical firm in the Industrial and Engineering sector. Participants assumed the role of a prospective investor and evaluated the common stock of Apax Limited. To isolate the incremental effects of CSR indicators and reduce investors' anchoring on financial performance, participants were explicitly told that the financial performance of Apax Limited has been mixed over the last three years. After reading financial performance highlights, participants were randomly assigned to one of the five experimental conditions. Participants in the control condition viewed background and financial information only.

Across all conditions, assurance of CSR information was absent. The case materials explicitly stated that "*only the Financial Information has been independently audited by a well-known audit firm*". We summarize sequence of the experimental events in Figure 4.1. We also provide the full experimental instrument in Appendix C.

Figure 4.1: Sequence of experimental events



Note: Figure 4.1 describes sequence of experimental events across the four CSR disclosure experimental manipulations. For the control condition, participants also first responded to the screening questions, read firm and industry background information, and finally read financial report containing financial information alone. Participants then proceeded to make valuation judgement, responded to manipulation check and post-task questions.

In designing the research instrument, we have taken a number of steps to ensure that our case materials reflect current disclosure practices. First, we reviewed the integrated reports of the top 50 South African companies by market capitalization for the year 2014, given that integrated reporting has been mandatory in South Africa since 2010. We also reviewed a sample of 2017 annual reports (i.e., Form 10-Ks) of U.S. mining firms subject to Section 1503 of the Dodd-Frank Act that requires SEC-registered mining firms to disclose social information in their financial reports[79]. The objective of these reviews was to observe how firms integrate their CSR information in financial reports, and accordingly align to our experimental manipulation. Second, we sought feedback from four leading experimental accounting researchers who have undertaken similar types of research projects to comment on our case materials. Finally, we conducted a pilot experiment using a smaller sample of MTurk participants to test whether our manipulations are working (Buchheit et al. 2017). We made adjustments to the experimental materials based on feedback we received, current disclosure practices and pilot experiment[80]. Overall, we believe that the experimental materials reflect current features of CSR disclosure practices.

4.4.3 Independent Variables

We manipulate two independent variables. First, we vary CSR performance valence at two levels (positive *versus* negative). In the positive (negative) condition, all CSR performance

[79] Our sample of US mining firms includes 10 leading firms by market capitalization.

[80] We run a 2 x 2 + 1 pilot experiment except in the pilot experiment, assurance of CSR information was *present* across all CSR conditions. In the main study, however, assurance of CSR information is *absent* across all CSR conditions. The control condition materials in the pilot and the main experiment were unchanged, and therefore we incorporate participants exposed to the control condition in our full analyses (Buchheit et al. 2017). We also ensured that participants who were in the pilot experiment are excluded in the main experiment using relevant MTurk features designed for this purpose.

measures of the firm have improved (deteriorated) over time[81]. Importantly, our experimental scenario focuses on a setting where the financial implications of CSR activities are quantified given that investors tend to ignore narrative CSR disclosures (Milne and Chan 1999). A review of the integrated reports of top 50 South African firms by market capitalization also indicates that companies disclose both the positive and negative financial implications of their CSR activities. For example, companies report significant financial savings stemming from reductions in water / energy usage as part of their CSR initiatives (for more examples, see Appendix D).

Second, we manipulate report format of CSR information at two levels (integrated *versus* separate report). In the integrated report condition, participants view financial and CSR information in one report. Consistent with Bucaro, Jackson, and Lill (2019), the financial and CSR information were reported in separate sections of the same report. To strengthen our manipulation of integrated reporting, participants were explicitly informed that they will read annual performance report that contain both financial and CSR measures of Apax Limited. In contrast, participants in the separate report condition first viewed standard financial statements, answered a debriefing question about the firm's financial performance and then viewed a separate report entitled *Sustainability Report* (for a similar approach see e.g., Arnold, Bassen, and Frank 2018). Further, participants were told that they will read financial statements and a separate Sustainability Report.

Our manipulations exhibit both naturally occurring features of CSR reporting and address existing policy questions (KPMG 2017; SEC 2016). For example, a recent KPMG (2017) survey reports that 60% of 4,900 worldwide companies, and 78% of the largest 250 global companies integrate CSR information in their 2017 financial reports (also see e.g.,

[81] On the surface, it may sound unusual for firms to report all negative CSR performance data. However, for experimental purposes, we make this design choice to reduce noise in our data and isolate investors' reactions to positive *versus* negative CSR information.

Cohen et al. 2012). Our second manipulation captures reporting format effects of different CSR performance measures by considering both positive and negative CSR disclosures. Historically in an unregulated environment, CSR disclosures have tended to be largely positive (Boiral 2013). However, as CSR reporting continues to become more mainstream and CSR reporting regulation matures, more variety of this type of disclosure will occur as managers would want to preempt litigation risks of withholding negative CSR news. Further, our experimental design includes a NO CSR control condition and therefore also speaks to settings where CSR disclosure is absent.

4.4.4 Dependent and Process Measures

The main dependent variable in our study is firm valuation. To measure participants' firm value estimates, we provided them the closing stock price of our case company (Apax Limited) at $4.60, and asked them to predict whether the stock price of Apax Limited will *increase*, *decrease* or *stay the same* based on the information provided. Based on their prediction, we asked participants to indicate the *increase* or *decrease* in percentage terms. This approach provides better control and rules out unrelated factors that participants may bring with them in their firm value estimates; and is consistent with prior studies (Coram, Monroe, and Woodliff 2009; Hopkins 1996). We compute our 'firm value' measure as the sum of change provided by the participants plus closing stock price.

We also collected data on a number of process measures. First, we asked participants to indicate whether the CSR information was 'assured, non-assured or unsure'. Second and relatedly, we collected a measure of investors' feelings of disclosure reliability. Participants responded on an 11-point scale anchored from 0 =”not at all reliable” to 10 = “extremely reliable”. Finally, we collected measures for several other process variables.

For example, we elicit measures of investors' perceived relevance and materiality of CSR information; processing ease; management credibility; and investors' CSR attitude.

4.5 Results

4.5.1 Manipulation Checks

Immediately after reading the case materials, participants were asked to respond to two manipulation check questions. First, we asked participants to recall whether the "CSR performance of Apax Limited was positive, negative or unsure". For the positive (negative) CSR conditions, 93% (92.5%) of the participants correctly stated that the CSR performance they viewed was positive (negative), indicating our CSR performance valence manipulation was successful. Second, we asked participants to indicate whether they received the CSR measures in an integrated report or in a separate CSR report. Approximately 91% (49%) of the participants correctly recalled that they read CSR information in a separate (integrated) report[82]. Finally, we asked participants in the no CSR control condition to recall whether the financial performance of Apax Limited was "positive, mixed or negative". Because participants in the control condition only considered financial information, it is important for our analyses that they correctly recalled that the financial performance of Apax Limited was mixed. For this reason, we retained

[82] We argue that the high failure rate in the integrated relative to the separate reporting condition is likely due to the fact that integrated reporting is relatively new and is a reporting format where investors, particularly nonprofessional investors do not have prior experience. Results are inferentially identical if we remove participants that failed our reporting format and/or CSR performance valence manipulation check questions. For this reason, we present results based on the full sample to increase statistical power of the results.

participants that successfully recalled that the financial performance of Apax Limited was mixed. Our final sample size is 164 participants[83].

4.5.2 Baseline Analysis

As a baseline analysis, we first establish whether CSR performance indicators are incrementally informative to investors' firm value estimates. Based on prior research, we expect investors' firm value estimates to be higher (lower) in response to positive (negative) CSR performance measures compared to the no CSR control condition.

Panel A of Table 4.2 presents descriptive statistics for investors' firm value estimates. Results show that the mean stock price estimates of investors who considered *positive* CSR indicators is $4.73, whereas the mean stock price of investors who considered financial information alone is $4.57. In the *negative* CSR conditions, the average stock price estimate is $4.35 relative to the average stock price estimate of $4.57 in the no CSR control condition[84].

Panel B of Table 4.2 below presents results of analysis of variance (ANOVA) with planned comparisons for our baseline analysis. Results show that investors' firm value estimates are significantly higher in response to positive CSR performance indicators relative to NO CSR control condition ($t = -2.244$, $p = 0.026$), and significantly lower in

[83] The majority of the excluded participants (n = 19) were in the control NO CSR condition, who took very little amount of time (i.e., less than 5 minutes) and/or failed condition-specific attention check question. For this reason, we have added additional 14 participants from the soft run who were in the control No CSR condition to increase power of the results. These participants successfully recalled the condition-specific manipulation check question that the financial performance of Apax Limited was mixed, and also spent a reasonable amount of time (i.e., 5 or more minutes). The case materials in the main experiment and soft run for the NO CSR control condition were identical.

[84] The closing stock price of Apax Limited was $4.60. The average stock price estimate of investors who viewed positive CSR information is $4.73, an increase of 3.5% or $0.13. On the other hand, the average stock price estimate of investors who viewed negative CSR information is $4.35, a decrease of 5.43% or $0.25. Investors in the NO CSR disclosure control condition did not significantly change their stock price estimate at $4.57 relative to $4.60.

response to negative CSR measures relative to no CSR condition (t = 3.160, p = 0.002). In sum, the results indicate that CSR performance measures are incrementally informative to investors' firm value estimates[85].

Table 4. 2: Descriptive and ANOVA results - Firm value estimates

Table 4.2 Panel A: Descriptive Statistics – Mean, (Standard Deviation) and Observations

CSR Disclosure	Integrated Report	Separate Report	Condition Means
Positive CSR	4.74 (0. 38) n = 31	4.71 (0. 31) n = 32	4.73 (0.35) n = 63
Negative CSR	4.44 (0.36) n = 35	4.25 (0.31) n = 33	4.35 (0.34) n = 68
NO CSR Condition	NA	NA	4.57 (0.28) n = 33

Table 4.2 Panel B: ANOVA with Planned Comparisons for H1

Hypotheses	**t-statistic**	**d.f.**	**P - value**
Positive CSR Disclosure *versus* No CSR Disclosure	-2.244	159	**0.026**
Negative CSR Disclosure versus No CSR Disclosure	3.160	159	**0.002**

Note: Panel A of Table 4.2 summarizes the descriptive statistics for investors' firm value estimates. Panel B presents the follow-up simple effect test results. We manipulate (1) whether CSR performance measures are positive *versus* negative and (2) whether CSR measures are integrated in a financial report *versus* reported in a separate report. For the dependent variable, *Firm Value estimates*, we provided participants the closing stock price of Apax Limited at $4.60, and asked them to predict whether the stock price of Apax Limited will *increase*, *decrease* or *stay the same* based on the information they have read. Based on their prediction, we asked participants to indicate the *increase* or *decrease* in percentage terms. We compute our 'Firm Value' measure as the sum of change provided by the participants plus the closing stock price.

[85] We tested whether these results are driven by investors' CSR attitude and/or their general political views, and find that the results are not driven by these factors.

Our results are consistent with prior archival and experimental research that documents the incremental effects of CSR reporting (Dhaliwal et al. 2011; Elliott et al. 2014; Milne and Patten 2002; Plumlee et al. 2015). Next, we examine whether integrating CSR performance measures in financial reports *versus* reporting in separate report exacerbates or attenuates effects of this information on investors' firm value estimates.

4.5.3 Tests of Hypotheses

We formally test four hypotheses to examine effects of CSR information and reporting format of this information on investors' firm value estimates. Our theory predicts that categories (here reporting format) triggers investors to adopt a single or multiple perspectives, such that integrated reporting causes investors to adopt a single perspective of financial information only. However, separate reporting evokes investors to adopt multidimensional perspectives of both financial and CSR information. As such, we predict that CSR information has a greater impact on investors' firm value estimates when reported in a separate report relative to an integrated report. Results are presented in Panel A of Table 4.3. Consistent with our prediction, we find a significant difference in the negative CSR disclosure conditions. Specifically, reporting negative CSR performance indicators in a separate report leads to stronger reactions from investors, such that their firm value estimates are more negative when this information is reported in a separate report relative to when integrated in a financial report ($t = 2.258$, $p = 0.025$). However, we do not find a significant difference between integrated or separate reporting for positive CSR performance indicators ($t = 0.379$, $p = 0.705$). Therefore, the results support H2b, but H2a is not supported.

We provide further analyses in Panel B of Table 4.3 to test our theory that CSR information has greater impact when reported in separate reports. Specifically, we compare

investors' reactions to CSR disclosure across alternative CSR reporting formats relative to the no CSR control condition. Consistent with our prediction, the results show that investors' firm value estimates are significantly higher (lower) in response to both positive (negative) CSR disclosure than the control condition when reported in separate reports: Positive CSR in separate report *versus* control condition ($t = -1.751$, $p = 0.082$) and negative CSR in separate report *versus* control condition ($t = 3.837$, $p = 0.000$). However, the results reveal that investors significantly adjust their firm value estimates only when positive CSR information is reported in an integrated report relative to the control condition ($t = -2.119$, $p = 0.036$), but not when negative CSR information is reported in an integrated report ($t = 1.635$, $p = 0.104$).

Collectively, the results indicate that separate reporting causes stronger reactions from investors, such that their firm value estimates are higher (lower) when positive (negative) CSR performance measures are reported in a separate report relative to a financial report.

Table 4. 3: Reporting format effects of CSR information

Table 4.3 Panel A: ANOVA with Planned Comparisons for H2a and H2b

Hypotheses	**t-statistic**	**d.f.**	***p*-value**
Integrated *versus* separate reporting: Positive CSR condition	0.379	159	0.705
Integrated versus separate reporting: Negative CSR condition	2.258	159	**0.025**

- o Contrasts for positive integrated *versus* positive separate conditions +1 and -1
- o Contrasts for negative integrated *versus* positive separate conditions +2 and -2

Table 4.3 Panel B: ANOVA with Planned Comparisons – further analyses for H2a and H2b

Positive CSR integrated *versus* control condition	-2.119	159	**0.036**
Positive CSR separated *versus* control condition	-1.751	159	**0.082**
Negative CSR integrated *versus* control condition	1.635	159	0.104
Negative CSR separated *versus* control condition	3.837	159	**0.000**

- o Contrasts for positive versus control condition +2, -1 and -1
- o Contrasts for negative versus control condition +4, -2 and – 2
- o For the individual reporting format contrasts, we used standard +1 and -1

Note: Panel A of Table 4.3 presents ANOVA results for H1a and H1b. Panel B presents the follow-up ANOVA results taking into account the control condition. We manipulate (1) whether CSR performance measures are positive *versus* negative and (2) whether CSR measures are integrated in a financial report *versus* reported in a separate report. For the dependent variable, *Firm Value estimates*, we provided participants the closing stock price of Apax Limited at $4.60, and asked them to predict whether the stock price of Apax Limited will *increase*, *decrease* or *stay the same* based on the information they have read. Based on their prediction, we asked participants to indicate the *increase* or *decrease* in percentage terms. We compute our 'Firm Value' measure as the sum of change provided by the participants plus the closing stock price.

4.5.4 Mediation Analyses

We examine possible channels in which separate reporting exacerbates the effects of CSR information on investors' firm value estimates. One possible channel is investors' perceived management credibility. For example, Wang and Tuttle (2014) show that investors use CSR performance as a cue to evaluate management credibility. Following

Baron and Kenny (1986), we conducted mediation analyses and find that investors' perceived management credibility mediates the relationship between reporting format of negative CSR information and investors' firm value estimates[86]. Specifically, we find that investors' perceived management credibility is significantly lower when negative CSR information is reported in a separate report than in an integrated report. Figure 4.2 further shows that (1) there is a significant relationship between reporting format of CSR information and investors' perceived management credibility (β -0.229, p = 0.061), (2) management credibility is significantly associated with firm value (β +0.281, p = 0.002), and (3) reporting format is significantly associated with firm value (β -0.264, p = 0.003) (4) but the significant relationship between reporting format and firm value is reduced when management credibility is incorporated[87] (β -0.211, p = 0.083).

In sum, the mediation analyses indicate that separate reporting acts as a subconscious heuristic cue and affects investors' perceived management credibility, which in turn influences their firm value estimates. We do not repeat the mediation analyses for the positive CSR condition because there are no reporting format effects for the positive CSR condition, as reported in Panel A of Table 4.3.

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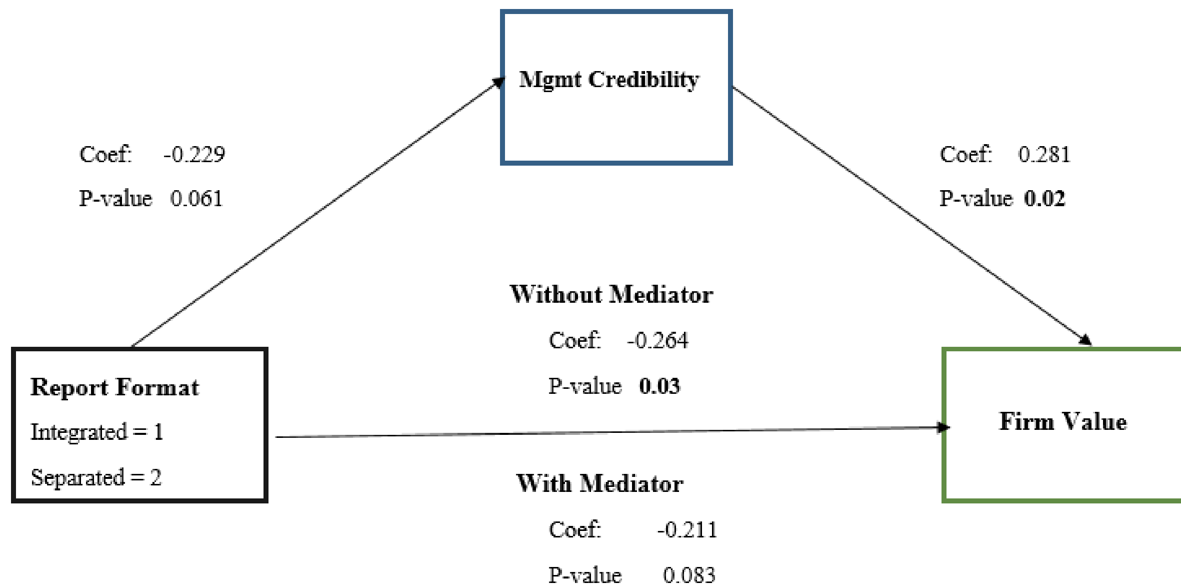
[86] We also collected data on several other process variables including investors' perceived relevance and materiality of CSR disclosure as well as access of CSR information across alternative reporting formats. We find that materiality partially mediates the relationship between reporting format of CSR information and firm value estimates. For brevity purposes, we present results of investors' perceived management credibility across alternative reporting formats.

[87] Following Preacher and Hayes (2008), we also performed mediation analyses based on Hayes Process macro (PROCESS Model 4) using non-parametric bootstrapping of 5,000 estimates at 95 percent confidence interval and find similar results. Specifically, results indicate that the effect of CSR report format on investors' firm value estimates operates through investors' perceived management credibility.

FIGURE 4.2: Mediation analyses – Management credibility (negative CSR conditions)



Note: Figure 4.2 shows mediation analysis for negative CSR disclosure condition. For Reporting Format, participants were either assigned to CSR information integrated in a financial report or reported in a separate CSR report. For Management Credibility, we asked participants "*how trustworthy do you believe the management of Apax Limited to be*" and provided them an 11-point scale ranging from 0 = "not at all trustworthy" to 11 = "very trustworthy". For the Firm Value variable, we provided participants the closing stock price of Apax Limited at $4.60, and asked them to predict whether the stock price of Apax Limited will *increase*, *decrease* or *stay the same* based on the information they have read. Based on their prediction, we asked participants to indicate the *increase* or *decrease* in percentage terms. We compute our 'Firm Value' measure as the sum of change provided by the participants plus the closing stock price.

4.5.5 CSR Assurance Classification

Next, we examine whether integrating CSR measures in a financial report triggers investors to misclassify non-assured CSR information as assured. Recall that assurance of CSR information was absent across all conditions. Panel A of Table 4.4 provides descriptive results and show that more investors in the integrated report conditions (n = 24, 36.36%) incorrectly classified CSR indicators as assured than investors in the separate report conditions (n = 15, 23.08%). Descriptive results also show that misclassifying investors

rated disclosure credibility higher (mean 8.72 > 7.62), and derived higher firm value estimates (mean 4.68 > 4.43) relative to investors who correctly classified CSR information as non-assured.

Panel B of Table 4.4 presents results of ANOVA with planned comparisons, and shows that misclassifying investors in the integrated report conditions rated credibility of CSR disclosure significantly higher (t = 2.727, p = 0.009), and derived significantly higher firm value estimates (t = 2.616, p = 0.013) compared to investors in the separate report conditions who correctly classified CSR information as non-assured[88]. Therefore, the results provide support to hypotheses (H3a and H3b).

Next, we provide further analyses and examine whether there are differences between the disclosure credibility ratings and firm value estimates of investors who correctly classified CSR information as non-assured. As expected, we find no significant differences, both for the disclosure credibility ratings (t = 0.841, p = 0.406) and firm value estimates (t = 0.491, p = 0.626). This latter finding provides additional evidence that misclassification leads investors to assess CSR disclosure credibility higher and derive higher firm value estimates.

Overall, our analyses suggest that integrated reporting relative to separate reporting leads more investors to misclassify non-assured CSR information as assured. Importantly, we find that misclassifying investors in the integrated report conditions assessed CSR disclosure credibility higher and derived significantly higher firm value estimates than investors who correctly classified CSR information as non-assured.

[88] As shown in Panel B of Table 4.4, we also compared misclassifying investors in the same integrated report conditions to investors who correctly classified CSR information as non-assured, and find that misclassifying investors derived significantly higher firm value estimates (t = 2.281, p = 0.028) relative to investors in the same integrated report condition who correctly classified CSR information as non-assured. As expected, we do not find significant differences in the firm value estimates of misclassifying and correct investors in the separate report conditions (t = 1.539, p = 0.133).

Table 4. 4: CSR assurance classification

Table 4.4 Panel A: Descriptive Statistics

	Classification	Credibility	Firm Value
Reporting Conditions	**n (%)**	**Mean (STD)**	**Mean (STD)**
Integrated Report			
Correct classification rate	19 (28.79)	7.89 (2.13)	4.46 (0.26)
Incorrect classification rate	24 (36.36)	8.79 (1.77)	4.72 (0.48)
Separate Report			
Correct classification rate	23 (35.38)	7.39 (1.75)	4.41 (0.31)
Incorrect classification rate	15 (23.08)	8.6 (1.55)	4.62 (0.52)
Total correct classification	42 (32.06)	7.62 (1.92)	4.43 (0.29)
Total incorrect classification	39 (29.77)	8.72 (1.67)	4.68 (0.49)

Table 4.4 Panel B: ANOVA with Planned Comparisons

Disclosure Credibility	**t-statistic**	**d.f.**	**P -value**
Correct *versus* Incorrect – Integrated *versus* Separate Report	2.727	44.95	**0.009**
Correct *versus* incorrect – Integrated Report	1.508	41	0.139
Correct *versus* incorrect – Separate Report	2.173	36	**0.036**
Correct *versus* correct – Integrated *versus* to Separate Report	0.841	40	0.406
Firm Value Estimates	**t-statistic**	**d.f.**	**P -value**
Correct *versus* Incorrect – Integrated *versus* Separate Report	2.616	39.33	**0.013**
Correct *versus* Incorrect – Integrated Report	2.281	36.94	**0.028**
Correct *versus* Incorrect – Separate Report	1.539	36	0.133
Correct *versus* Correct – Integrated *versus* to Separate Report	0.491	40	0.626

Note: Table 4.4 presents investors' perceived assurance of CSR performance measures. Panel A shows the descriptive statistics while Panel B provides ANOVA results. For the dependent variable, *Disclosure Credibility*, participants responded on an 11-point scale anchored from 0 ="not at all reliable" to 10 = "extremely reliable". For the second dependent variable, *Firm Value estimates*, we used the same measure as in Tables 3 and 4.

- Correct classification = participants who correctly stated that CSR measures were not assured.
- Incorrect classification = participants who incorrectly stated that CSR measures were assured.
- We do not include participants who were "unsure" of whether CSR measures were assured or non-assured in the analyses. These participants were 33.33% (40%) in the integrated (separate) report conditions. There are also two (2) missing values, one in each reporting condition.

4.6 Discussion and Conclusion

In this study, we extend prior literature by considering how the reporting format of CSR information affects investors' reactions to CSR performance measures. Recent archival studies find that integrated reporting is incrementally informative to capital-markets (Barth et al. 2017; Lee and Yeo 2016), and has real effects on firm behavior (Christensen et al. 2017; Downar et al. 2019). The archival literature suggests that the capital-market and real effects of integrated reporting stem from increased dissemination of CSR information to wider audience. However, experimental research highlights unintended consequences of integrating CSR measures in financial reports (Bucaro, Jackson, and Lill 2019; Johnson 2019; Reimsbach, Hahn, and Gürtürk 2018).

Building on this literature and the theory of category construction, we conducted an experiment with nonprofessional investors and find that CSR information has a greater impact on investors' firm value estimates when reported in a separate report relative to an integrated report. We also find that more investors misclassified non-assured CSR information as assured when integrated in a financial report compared to when reported in a separate CSR report. Consequently, misclassifying investors rated CSR disclosure credibility higher, and derived significantly higher firm value estimates relative to investors who correctly classified this information as non-assured. Taken together, our results are consistent with the theory of category construction that categories can trigger perspectives (i.e., unidimensional *versus* multidimensional perspective). This indicates that integrated reporting leads investors to adopt a unidimensional perspective and treat financial and CSR measures as equivalent, whereas separate reporting evokes investors to adopt a multidimensional perspective that includes both financial and CSR performance measures. As a result, integrated reporting diminishes CSR performance measures and causes investors to misclassify non-assured CSR measures as assured.

These results have several policy implications. First, recent surveys show considerable heterogeneity in CSR reporting approaches, with 60% of 4,900 worldwide companies integrating their CSR information in financial reports in 2017 (KPMG 2017). Of this, 45% obtained independent assurance of their CSR disclosures. Given the considerable heterogeneity in CSR reporting approaches by global firms and the worldwide move to more integrated reporting as well as the increase in CSR reporting regulations globally, understanding how alternative CSR reporting formats affect investors is an important topic for regulators, standard-setters, interest groups, and the business community. Specifically, our study should be informative to global regulators, and particularly responds to the SEC's recent inquiry of "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC 2016, p. 214).

Second, our study is informative to CSR reporting and disclosure assurance standard-setting. Currently, assurance of CSR information is largely voluntary internationally. Our results indicate that the integration of CSR performance measures in financial reports may lead investors to misinterpret this form of information as assured when that is not the case. These findings extend the findings of Hodge (2001) and highlight the importance of requiring firms to explicitly disclose whether and which CSR performance measures are assured or non-assured, especially when this form of information is integrated in audited financial reports.

Finally, our study extends limited research on how integrated reporting affects investors. Existing research has so far focused on capital-market reactions to the adoption of integrated reporting (Barth et al. 2017; Lee and Yeo 2016). Recent experimental studies also provide evidence on how integrated reporting affects managers (Esch, Schnellbächer, and Wald 2019; Johnson 2019), auditors (Green and Cheng 2019) and investors (Arnold,

Bassen, and Frank 2018; Bucaro, Jackson, and Lill 2019; Reimsbach, Hahn, and Gürtürk 2018). We add to this growing literature and provide early evidence on how integrated reporting affects *nonprofessional* investors' firm value estimates. Specifically, we are the first to show that integrating CSR performance measures in financial reports causes investors to misclassify non-assured CSR measures as assured.

The implications of the study notwithstanding, several caveats are in order which provide opportunities for future research. First, similar to most experimental research that provides participants with additional information, our study is not immune to demand effects. However, we have taken several steps to mitigate demand effects such as including a control condition and using a between-participants experimental design. Second, our results do not speak to firms that simultaneously disclose CSR information both in their financial reports and other alternative outlets such as standalone CSR reports and/or company websites (Cohen et al. 2012). Using multiple channels to communicate CSR information plausibly increases dissemination of this information (Christensen et al. 2017). However, capital-market and/or real effects of repeated disclosures within one or across multiple reporting channels remain an important area for further research (Cazier and Pfeiffer 2017). Third, our experimental case focuses on a setting where the financial implications of CSR measures are explicitly highlighted. Given our theory of category construction, quantifying CSR measures may have increased the resemblance of financial and CSR measures. Future research may examine whether our experimental findings extend to a setting where CSR measures are not quantified, and presented in a narrative form. Finally, our study does not effectively address the question of whether integrating CSR information in financial reports *per se* increases dissemination and awareness of this information. Future research using eye-tracking technology can determine whether integrated reporting does indeed increase dissemination of CSR information.

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APPENDIX C – INSTRUMENT 2

Questions: [Screening Questions]
In order to help us better understand why your responses might be different from those of other participants in this study, please answer the following questions.

1. Have you taken at least two (2) college-level accounting and/or finance courses?
   - o Yes
   - o No

2. Have you purchased or sold individual stocks at least two times in the past?
   - o Yes
   - o No

[ALL CONDITIONS]

INDUSTRY AND COMPANY BACKGROUND

INDUSTRY OVERVIEW

Apax Limited is a publicly traded company that operates within the Industrial and Engineering sector. This sector is highly competitive as it attracts a growing number of small business start-ups, with leading multinational giants already controlling a large share of the market. Broader macroeconomic factors such as recurring financial crises and uncertainty surrounding oil and gas prices further pose unpredictable challenges to the industry. These challenges are likely to remain in the foreseeable future. Overall, the Board and Management of Apax Limited ensure current shareholders and potential investors that the Company is positioned well going forward.

COMPANY OVERVIEW

Apax Limited is an industrial and assembling company that operates throughout the U.S. The company's primary business segment develops and commercializes modern technologies for homes and businesses. Our products include appliances such as washing machines, vacuum cleaners, and microwave ovens. We also sell heaters and air conditioners. Our secondary business segment provides assembling services for automobile and computer hardware. Given the industry's intense competition, our competitive strategy is to sell products and services at discounted prices to attract and retain customers. As such, cost management remains a top priority, both in terms of controlling operational and non-operational costs.

At Apax Limited, our goal is to continuously deliver great value to our clients and shareholders. We do so with respect to other stakeholders and our shared environment.

On the next page, you will view a Press Release from the management of Apax Limited showing summary of key financial performance indicators of the Company relative to industry average as of December 31, 2017.

[NO CSR Control Condition (1)]

PRESS RELEASE

Apax Limited

For the Year Ended December 31, 2017

Management Discussion of Financial Results

Apax Limited announces Annual Financial Results for the year ended December 31, 2017. The Company recorded net income of $6.35 million for the current fiscal year compared to $5.68 million in the previous year 2016, resulting in an 11.8% year-on-year increase.

Despite this year-on-year increase, **Apax's financial results over the past three years have been mixed relative to industry peers.** This mixed performance is caused by poor traffic of sales due to increased industry competition.

The following table compares our performance indicators to the industry average:

Key Performance Indicators	Apax Limited	Industry Average
Revenue Growth (From Prior Year)	5.83%	11.66%
Earnings Growth (Last 5 Years)	6.72%	10.53%
Return on Assets	8.42%	8.44%
Total Debt/ Equity	67.16%	73.82%
Profit Margin	9.94%	8.72%

On the next page, you will view the Financial Statements of Apax Limited for the year ended December 31, 2017.

Please Note:

- **The Financial Statements have been independently audited by a well-known audit firm.**

FINANCIAL STATEMENTS
APAX LIMITED
For the Year Ended December 31, 2017

Income Statement

(Amount in Thousands)

	2017	2016	2015
Total Revenue	$ 79,964	$ 75,560	$ 86,220
Costs and Expenses			
Cost of Goods Sold	49,644	47,425	49,212
Other General Expenses	22,250	20,800	23,738
Total Costs and Expenses	71,894	68,225	72,950
Profit before Income Tax	8,070	7,335	13,270
Provision for Income Tax	1,720	1,655	1,895
Net Income	**$6,350**	**$5,680**	**$11,375**

Balance Sheet

(Amount in Thousands)

	2017	2016	2015
ASSETS			
Current Assets	23,814	20,112	29,240
Non-current Assets	26,920	25,260	34,002
Total Assets	**$50,734**	**$45,372**	**$63,242**
LIABILITIES			
Current Liabilities	9,140	9,880	8,550
Long-term Liabilities	11,243	11,450	11,003
Total Liabilities	**$20,383**	**$21,330**	**$19,553**
Total Stockholders' Equity	30,351	24,042	43,689
Total Liabilities and Stockholders' Equity	**$50,734**	**$45,372**	**$63,242**

End

[POSITIVE CSR – INTEGRATED REPORT CONDITION (2)]

PRESS RELEASE

Apax Limited

For the Year Ended December 31, 2017

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Please Note:

Apax Limited discloses sustainability performance information in the Financial Statements. We do this integration to highlight the impact of our sustainability practices on our financial performance.

FINANCIAL STATEMENTS
APAX LIMITED
For the Year Ended December 31, 2017

Income Statement

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Total Liabilities and Stockholders' Equity	**$50,734**	**$45,372**	**$63,242**

Sustainability Performance

	2017	2016	2015
Energy Usage (GJ)	344,502	390,200	422,400
Cost savings due to reductions in energy usage ($)	462,345	202,196	186,765
Carbon Emissions CO_2 (tons)	648,900	725,000	801,000
Paper Usage per Employee	6,872	8,468	9,860
Cost savings due to reductions in paper usage ($)	32,203	11,300	10,020
Fresh Water Usage (gallons)	4,210,000	4,650,000	5,120,000
Cost savings due to reductions in water usage ($)	148,605	109,420	98,280
Number of Work Related Injuries	5	6	12
Number of Ongoing Environmental Lawsuits	11	13	24

Note:

- **Our sustainability indicators have all improved. This enhances our sustainability profile.**
- **In addition to social and environmental benefits, total cost savings realized from sustainability activities in 2017 amount to $643,153, significantly contributing to our financial performance.**

Management's Discussion and Analysis of Performance

Sustainability Statement

Apax Limited recognizes a growing responsibility to find solutions to environmental and climate change issues. We also recognize that good sustainability practices can have financial benefits for our company. As noted above, we have realized total cost savings of $643,153 from sustainability activities in 2017, mainly from reductions in energy usage, while also reducing our carbon emissions.

Sustainability Rating

Sustainability ratings measure environmental and social responsibility of a frim. The Table below shows our Sustainability Rating score relative to the industry average. Our rating is "Excellent" or in Category A*.

SUSTAINABILITY RATING SCORES

	Apax Limited	Industry Average
Environmental Score	88.60	64.33
Social Responsibility Score	92.55	70.20
Governance Score	91.23	65.43
Overall Sustainability Rating Score	**90.79**	**66.84**

- Note: The Sustainability Rating is provided by an independent International Rating Agency

Key Sustainability Performance Indicators

Energy Usage

Total energy usage of 344,502 Gigajoules (GJ) in this year is 11.71% lower than last year's energy consumption of 390,200 Gigajoules (GJ). Due to this reduction in energy usage, we realized an annual cost savings of $462,345, significantly improving our financial performance. Further, successfully reducing our energy consumption shows our strong commitment to sustainable business practices.

Carbon Emissions

Total carbon emissions decreased 10.5% from 725,000 metric tons of CO_2 in 2016 to 648,900 metric tons of CO_2 in 2017. The reductions in carbon emissions not only resulted in meaningful cost savings, but also enhanced our sustainability ratings.

Paper Usage

This year's office paper usage per employee of 6,872 is 18.85% lower than last year's office paper usage per employee of 8,468. This has resulted in a meaningful cost saving of $32,203, and enhanced our financial performance as well as our sustainability profile.

Water Usage

We have identified water consumption as a significant driver of our sustainability performance and total overhead costs. Our water usage of 4.21 million gallons in this year is 9.46% lower than last year's water usage of 4.65 million gallons. Cost savings realized from reductions in water usage is $148,605.

Employee Health and Safety

We take seriously our employees' health and safety. Although we have reduced work related injuries significantly from 10 to 5 during the year, it is disappointing that we are still not reaching our goal of zero injuries. All five injuries were not life-threatening and we are pleased to report that the employees will soon return to work.

Environmental Lawsuits

Our business activities are subject to various federal and state laws and regulations relating to the protection of the environment. These laws and regulations require us to respond to certain environmental legal claims. At December 31, 2017 we have 11 ongoing environmental lawsuits, down from 13 this time last year. Our legal team is working with the concerned parties for optimal outcome.

[NEGATIVE CSR – INTEGRATED REPORT CONDITION (3)]

PRESS RELEASE

Apax Limited

For the Year Ended December 31, 2017

Management Discussion of Financial Results

Apax Limited announces Annual Financial Results for the year ended December 31, 2017. The Company recorded net income of $6.35 million for the current fiscal year compared to $5.68 million in the previous year 2016, resulting in an 11.8% year-on-year increase.

Despite this year-on-year increase, **Apax's financial results over the past three years have been mixed relative to industry peers.** This mixed performance is caused by poor traffic of sales due to increased industry competition.

The following table compares our performance indicators to the industry average:

Key Performance Indicators	Apax Limited	Industry Average
Revenue Growth (From Prior Year)	5.83%	11.66%
Earnings Growth (Last 5 Years)	6.72%	10.53%
Return on Assets	8.42%	8.44%
Total Debt/ Equity	67.16%	73.82%
Profit Margin	9.94%	8.72%

On the next page, you will view the **Financial Statements** of Apax Limited for the year ended December 31, 2017.

- **Only the Financial Information has been independently audited by a well-known audit firm.**

Please Note:

Apax Limited discloses sustainability performance information in the Financial Statements. We do this integration to highlight the impact of our sustainability practices on our financial performance.

FINANCIAL STATEMENTS
APAX LIMITED
For the Year Ended December 31, 2017

Income Statement

(Amounted in Thousands)	**2017**	**2016**	**2015**
Total Revenue	$ 79,964	$ 75,560	$ 86,220
Costs and Expenses			
Cost of Goods Sold	49,644	47,425	49,212
Other General Expenses	22,250	20,800	23,738
Total Costs and Expenses	71,894	68,225	72,950
Profit before Income Tax	8,070	7,335	13,270
Provision for Income Tax	1,720	1,655	1,895
Net Income	**$6,350**	**$5,680**	**$11,375**

Balance Sheet

(Amount in Thousands)	**2017**	**2016**	**2015**
ASSETS			
Current Assets	23,814	20,112	29,240
Non-current Assets	26,920	25,260	34,002
Total Assets	**$50,734**	**$45,372**	**$63,242**
LIABILITIES			
Current Liabilities	9,140	9,880	8,550
Long-term Liabilities	11,243	11,450	11,003
Total Liabilities	**$20,383**	**$21,330**	**$19,553**
Total Stockholders' Equity	30,351	24,042	43,689
Total Liabilities and Stockholders' Equity	**$50,734**	**$45,372**	**$63,242**

Sustainability Performance

	2017	**2016**	**2015**
Energy Usage (GJ)	390,200	344,502	318,240
Costs due to increase in energy usage ($)	262,345	202,196	156,179
Carbon Emissions CO_2 (tons)	725,000	648,900	587,331
Paper Usage per Employee	8,468	6,872	5,902
Costs due to increases in paper usage ($)	12,203	11,300	9,544
Fresh Water Usage (gallons)	4,650,000	4,210,000	3,823,535
Costs due to increase in water usage ($)	128,605	109,420	88,923
Number of Work Related Injuries	10	5	14
Number of Ongoing Environmental Lawsuits	13	11	6

Note:

- **Our sustainability indicators show negative trend. This damages our sustainability profile.**
- **In addition to negative environmental and social effects, total cost of sustainability activities in 2017 amount to $643,153, having significant negative impact on our financial performance.**

Management's Discussion and Analysis of Performance

Sustainability Statement

Apax Limited recognizes a growing responsibility to find solutions to environmental and climate change issues. We also recognize that our sustainability practices have direct impact on our financial performance. As noted above, additional costs due to increase in sustainability indicators amount to $643,153, mainly from increase in energy usage, while significantly increasing our carbon emissions.

Sustainability Rating

Sustainability ratings measure environmental and social responsibility of a frim. The Table below shows our Sustainability Rating score relative to the industry average. Our rating is "Poor" or in Category C*.

SUSTAINABILITY RATING

	Apax Limited	**Industry Average**
Environmental Score	24.11	64.33
Social Responsibility Score	30.20	70.20
Governance Score	35.42	65.43
Overall Sustainability Rating Score	**29.91**	**66.84**
Note: The Sustainability Rating is provided by an independent International Rating Agency		

Key Sustainability Performance Indicators

Energy Usage

Total energy usage of 390,200 Gigajoules (GJ) in this year is 11.71% higher than last year's 344,502 Gigajoules (GJ). This has increased our operating expenses by $462,345, consequently undermining the overall reported financial performance in 2017. We also recognize that this increase in energy usage works against our sustainability and climate change goals.

Carbon Emissions

Total carbon emissions increased 10.5% to 725,000 metric tons of CO_2 in 2017 from 648,900 metric tons of CO_2 in 2016. The increase in carbon emissions not only contributed to increases in energy costs, but also negatively affected our sustainability ratings as well as carbon emission targets.

Paper Usage

This year's office paper usage per employee of 8,468 is 18.85% higher than last year's paper usage per employee of 6,872. The increase in paper usage has increased our operating expenses by $32,203. The increase in paper usage has negatively affected our financial performance and sustainability profile.

Water Usage

We have identified water consumption as a significant driver of our sustainability performance and total overhead costs. Our water usage of 4.65 million gallons is 9.46% higher than last year's water usage of 4.21 million gallons. The increase in water usage has increased our operational cost by $148,605.

Employee Health and Safety

We take seriously our employees' health and safety. Although we have reduced work related injuries significantly in the past, it is disappointing to report that we had 10 injuries during the year, compared to 5 injuries last year. Our goal of zero injuries remains management's priority. All the injuries were not life-threatening and we are pleased to report that the employees will soon return to work.

Environmental Lawsuits

Our business activities are subject to various federal and state laws and regulations relating to the protection of the environment. These laws and regulations require us to respond to certain environmental legal claims. At December 31, 2017 we have 13 ongoing environmental lawsuits, up from 11 this time last year. Our legal team is working with the concerned parties for optimal outcome.

[POSITIVE CSR – SEPARATE REPORT CONDITION (4)]

PRESS RELEASE

Apax Limited

For the Year Ended December 31, 2017

Management Discussion of Financial Results

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Despite this year-on-year increase, **Apax's financial results over the past three years have been mixed relative to industry peers.** This mixed performance is caused by poor traffic of sales due to increased industry competition.

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Profit Margin	9.94%	8.72%

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Please Note:

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FINANCIAL STATEMENTS

APAX LIMITED

For the Year Ended December 31, 2017

Income Statement

(Amount in Thousands)

	2017	2016	2015
Total Revenue	$ 79,964	$ 75,560	$ 86,220
Costs and Expenses			
Cost of Goods Sold	49,644	47,425	49,212
Other General Expenses	22,250	20,800	23,738
Total Costs and Expenses	71,894	68,225	72,950
Profit before Income Tax	8,070	7,335	13,270
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Net Income	**$6,350**	**$5,680**	**$11,375**

Balance Sheet

(Amount in Thousands)

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Total Liabilities and Stockholders' Equity	**$50,734**	**$45,372**	**$63,242**

End

[To strengthen the separate report manipulation, after viewing the above financial statements participants answered the following debriefing question about the firm's financial performance:]

Please give your opinion on the financial performance of Apax Limited:

- o Good performance
- o Average performance
- o Bad performance

On the next page you will view the Sustainability Report of Apax Limited for the year ended December 31, 2017.

SUSTAINABILITY REPORT

Our Sustainability Report includes a summary of key sustainability performance indicators and management's discussion of key indicators as of December 31, 2017.

Sustainability Statement

Apax Limited recognizes a growing responsibility to find solutions to environmental and climate change issues. We also recognize that our sustainability practices have direct impact on our financial performance.

Sustainability Rating

Sustainability ratings measure environmental and social responsibility of a frim. The Table below shows our Sustainability Rating score relative to the industry average. Our rating is "Excellent" or in Category A*.

SUSTAINABILITY RATING SCORES

	Apax Limited	**Industry Average**
Environmental Score	88.60	64.33
Social Responsibility Score	92.55	70.20
Governance Score	91.23	65.43
Overall Sustainability Rating Score	**90.79**	**66.84**

- Note: The Sustainability Rating is provided by an independent International Rating Agency

Key Sustainability Performance Indicators

(Figures are stated in full)	**2017**	**2016**	**2015**
Energy Usage (GJ)	344,502	390,200	422,400
Savings due to reductions in energy usage ($)	462,345	202,196	186,765
Carbon Emissions CO2 (tons)	648,900	725,000	801,000
Paper Usage per Employee	6,872	8,468	9,860
Savings due to reductions in paper usage ($)	32,203	11,300	10,020
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Savings due to reductions in water usage ($)	148,605	109,420	98,280
Number of Work Related Injuries	5	10	14
Number of Ongoing Environmental Lawsuits	11	13	24

Energy Usage

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Water Usage

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Employee Health and Safety

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End

[NEGATIVE CSR – SEPARATE REPORT CONDITION (5)]

PRESS RELEASE

Apax Limited

For the Year Ended December 31, 2017

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APAX LIMITED
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Our Sustainability Report includes a summary of key sustainability performance indicators and management's discussion of key indicators as of December 31, 2017.

Sustainability Statement

Apax Limited recognizes a growing responsibility to find solutions to environmental and climate change issues. We also recognize that our sustainability practices have direct impact on our financial performance.

Sustainability Rating

Sustainability ratings measure environmental and social responsibility of a frim. The Table below shows our Sustainability Rating score relative to the industry average. Our rating is "Poor" or in Category C*.

SUSTAINABILITY RATING

	Apax Limited	Industry Average
Environmental Score	24.11	64.33
Social Responsibility Score	30.20	70.20
Governance Score	35.42	65.43
Overall Sustainability Rating Score	**29.91**	**66.84**
Note: The Sustainability Rating is provided by an independent International Rating Agency		

Key Sustainability Performance Indicators

(Figures are stated in full)	2017	2016	2015
Energy Usage (GJ)	390,200	344,502	318,240
Costs due to increase in energy usage ($)	462,345	202,196	156,179
Carbon Emissions CO2 (tons)	725,000	648,900	587,331
Paper Usage per Employee	8,468	6,872	5,902
Costs due to increases in paper usage ($)	32,203	11,300	9,544
Fresh Water Usage (gallons)	4,650,000	4,210,000	3,823,535
Costs due to increase in water usage ($)	148,605	109,420	88,923
Number of Work Related Injuries	10	5	14
Number of Ongoing Environmental Lawsuits	13	11	6

Energy Usage

Total energy usage of 390,200 Gigajoules (GJ) in this year is 11.71% higher than last year's 344,502 Gigajoules (GJ). This has increased our operating expenses by $462,345, consequently undermining the overall reported financial performance in 2017. We also recognize that this increase in energy usage works against our sustainability and climate change goals.

Carbon Emissions

Total carbon emissions increased 10.5% to 725,000 metric tons of CO_2 in 2017 from 648,900 metric tons of CO_2 in 2016. The increase in carbon emissions not only contributed to increases in energy costs, but also negatively affected our sustainability ratings as well as carbon emission targets.

Paper Usage
This year's office paper usage per employee of 8,468 is 18.85% higher than last year's paper usage per employee of 6,872. The increase in paper usage has increased our operating expenses by $32,203. The increase in paper usage has negatively affected our financial performance and sustainability profile.

Water Usage
We have identified water consumption as a significant driver of our sustainability performance and total overhead costs. Our water usage of 4.65 million gallons is 9.46% higher than last year's water usage of 4.21 million gallons. The increase in water consumption has increased our operational cost by $148,605. It has also decreased our sustainability ratings, and hinders our conservation efforts of natural resources.

Employee Health and Safety
We take seriously our employees' health and safety. Although we have reduced work related injuries significantly in the past, it is disappointing to report that we had 10 injuries during the year, compared to 5 injuries last year. Our goal of zero injuries remains management's priority. All the injuries were not life-threatening and we are pleased to report that the employees will soon return to work.

Environmental Lawsuits
Our business activities are subject to various federal and state laws and regulations relating to the protection of the environment. These laws and regulations require us to respond to certain environmental legal claims. At December 31, 2017 we have 13 ongoing environmental lawsuits, up from 11 this time last year. Our legal team is working with the concerned parties for optimal outcome.

End

QUESTIONS

Question: Firm Value Estimates

Directions: To answer the following questions, please consider the information about Apax Limited you have read:

1. Before the information was released, the share price of Apax Limited was **$4.60**. Based on the performance of the Company, what are your predictions of the share price upon release of the reports?

- Increase ( )
- Decrease ( )
- No Change ( )

2. If you believe that the share price of Apax Limited will **increase** or **decrease**, please indicate by how much in percentage terms?

- Increase by (%)

  OR

- Decrease by (%)

Question: Willingness to Invest

3. How attractive is Apax Limited as a potential investment?

		Not at all Attractive										Very Attractive
	Attractiveness of Apax Limited as a potential investment is:	0	1	2	3	4	5	6	7	8	9	10

4. Assume you have $10,000 to invest in the Industrial and Engineering Sector. What percentage of this $10,000 will you invest in Apax Limited's stock?

		Nothing at All										Entire Amount
	My investment in Apax Limited would be:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Question: Disclosure Reliance

5. Please give your opinion on the **reliability** of Apax Limited's reported information:

		Not at all reliable										Extremely reliable
	The reliability of **Financial** information is:	0	1	2	3	4	5	6	7	8	9	10
	The reliability of **Sustainability** information is:	0	1	2	3	4	5	6	7	8	9	10

Question: Disclosure Relevance

6. Please indicate the relevance of Apax Limited's information to your investment judgements:

		Not at all relevant										Extremely relevant
	The relevance of Financial information to my investment judgement is:	0	1	2	3	4	5	6	7	8	9	10
	The relevance of Sustainability information to my investment judgement is:	0	1	2	3	4	5	6	7	8	9	10

Question: Influence of Sustainability Matters

7. To what extent did the **sustainability** performance of Apax Limited influence your judgements?

		Nothing at all										Completely
	Influence of the sustainability performance on my investment judgement is:	0	1	2	3	4	5	6	7	8	9	10

Question: Processing Ease

8. Please indicate your level of agreement or disagreement with the following statements:

		Strongly Disagree										Strongly Agree
	Sustainability information of Apax Limited is easy to process	0	1	2	3	4	5	6	7	8	9	10
	Sustainability information of Apax Limited is difficult to understand	0	1	2	3	4	5	6	7	8	9	10

Question: Apax Limited's Social Reputation

9. Based on the sustainability information provided, please give your opinion on the social and environmental reputation of Apax Limited.

		Very Low										Very High
	Apax Limited's social and environmental reputation is:	0	1	2	3	4	5	6	7	8	9	10

Questions: Management Competence and Credibility

10. How competent do you believe the management of Apax Limited to be?

		Not at all Competent										Very Competent
	The management of Apax Limited is	0	1	2	3	4	5	6	7	8	9	10

11. How trustworthy do you believe the management of Apax Limited to be?

		Not at all Trustworthy										Very Trustworthy
	The management of Apax Limited is	0	1	2	3	4	5	6	7	8	9	10

Questions: Affect

12. Please indicate your level of agreement or disagreement with the following four statements

		Strongly Disagree										Strongly Agree
	I was happy with Apax Limited's sustainability performance	0	1	2	3	4	5	6	7	8	9	10
	I was upset with Apax Limited's sustainability performance	0	1	2	3	4	5	6	7	8	9	10
	I was disappointed with Apax Limited's sustainability performance	0	1	2	3	4	5	6	7	8	9	10
	I was pleased with Apax Limited's sustainability performance	0	1	2	3	4	5	6	7	8	9	10

MANIPULATION CHECKS

Questions: Manipulation Checks

Please answer the following questions about the case materials, to the best of your recollections.

1. Apax Limited's net income from 2016 to 2017
   - o Increased
   - o Decreased
   - o Remained Constant

2. Relative to the Industry, the financial performance of Apax Limited was:
   - o Positive
   - o Mixed
   - o Negative

3. The sustainability performance of Apax Limited was:
   - o Positive
   - o Negative
   - o Not Sure

4. Sustainability information of Apax Limited was reported in:
   - o Financial Statements
   - o Separate Sustainability Report
   - o Not Sure

5. Sustainability information of Apax Limited was:
   - o Assured
   - o Not Assured
   - o Not Sure

POST-TASK QUESTIONS

Questions: Post-task Questions

Please answer the following demographical questions.

1. What is your sex?
    - o Male
    - o Female

2. How old are you?
    - o 18-24
    - o 25-34
    - o 35-44
    - o 45-54
    - o 55 or Older

3. What is your native language?
    - o English
    - o Other language

5. How many Accounting courses have you taken?
    - o 0
    - o 1-5
    - o 6-10
    - o I majored in Accounting

6. How many Finance courses have you taken?
    - o 0
    - o 1-5
    - o 6-10
    - o I majored in Finance

7. Please rate your own knowledge of the meaning and interpretation of financial statements.

		Incompetent										Very Competent
	My knowledge of the meaning and interpretation of financial statements is:	0	1	2	3	4	5	6	7	8	9	10

8. Please indicate if you are Strongly Liberal (1), Neutral (6), or Strongly Conservative (11).

		Strongly Liberal					Neutral			Strongly Conservative		
	I identify myself as:	1	2	3	4	5	6	7	8	9	10	11

9. How many full time years of working experience do you have?

- 0
- 1-5
- 6-10
- 11-15
- More than 15 Years

10. How many times have you assessed a company's **financial** performance by analyzing its financial statements?

- This is my first time
- 1 – 5 times
- 6 – 10 times
- More than 10 times

11. How many times have you assessed a company's **sustainability** performance by analyzing its sustainability disclosures?

- This is my first time
- 1 – 5 times
- 6 – 10 times
- More than 10 times

12. Have you ever bought or sold an individual company's common stock or debt securities, either individually or through a mutual or pension fund?

- Yes
- No

13. Do you plan to invest in an individual company's common stock or debt securities in the next five years?

- Yes
- No

14. Please indicate your level of agreement or disagreement with the following statement:

		Strongly Disagree										Strongly Agree
	I carefully look at sustainability disclosures of companies before I invest in companies	0	1	2	3	4	5	6	7	8	9	10
	I perceive sustainability risk as "significant" risk for my investment decisions	0	1	2	3	4	5	6	7	8	9	10
	Sustainability performance of companies is **NOT** really an important factor for my investment decisions	0	1	2	3	4	5	6	7	8	9	10

15. Please indicate your level of agreement or disagreement with the following statement:

		Strongly Disagree										Strongly Agree
	I strongly believe that companies should sacrifice **profitability** to preserve the environment	0	1	2	3	4	5	6	7	8	9	10

END

Thank you very much for your participation.

APPENDIX D – EXAMPLES OF CSR DISCLOSURES

Anglo American Platinum, Page 35
During 2014, Anglo American consumed 108 million GJ of energy (2013: 106 million GJ). The implementation of a total of 325 energy- and carbon-saving projects as part of the ECO2MAN programme accounted for a 5% reduction against our business as usual consumption target of 7% by 2015. The resultant avoided energy cost is estimated at $105 million.

Life Healthcare, Page 26
Progress on our environmental initiatives was of particular importance as the Group realized savings – financially and through a reduction in resource usage. As an example, our inland laundry site saved about 42 million litres of water over a period of 12 months. This equates to an annual saving of R0.7 million. We also invested R15.6 million in heat pumps over a two year period. This resulted in an annual saving of 7.6 GWh in 33 hospitals which equates to an annual saving of about R8 million.

Goldfields, Page 62
During 2014, Cerro Corona achieved a reduction in diesel consumption intensity of 12% (TJ/MT mined) against a target of 12% and a reduction in electricity consumption intensity of 6% (TJ/MT processed) against a target of 8%, leading to savings of US$4.3 million in energy costs.

Spar Group, Page 58
The average price of diesel decreased by 0.2% in the year to September 2014 (2013: increased by 11%). The amount spent on fuel to perform our day-to-day activities is approximately R184 million a year, thus managing this cost materially contributes to our sustainable long-term financial performance.

Truworths, Page 3
To align with the increasing trend towards online reporting and electronic access to information, we have elected no longer to print our Report and rather have made it available online. This has resulted in a meaningful cost saving and has also reduced our environmental impact. A preliminary report containing abridged financial statements has been mailed to all.

Pioneer Food, Page 58
10 energy minimisation opportunities ("EMOs") implemented with savings estimated at R2.2 million.

Sasol, Page 45
Our total GHG emissions globally (measured in CO_2 equivalent) decreased slightly to 70.5 million tons (Mt) for 2014. This figure includes the direct emissions associated with our processes and our own tanker fleets (Scope 1 emissions), as well as the indirect emissions associated with our electricity imports (Scope 2). Our GHG emissions intensity (tons CO_2 per ton production) has increased to 3,20 up from 2,98 in 2013. This increase is largely due to the sale of Arya Sasol Polymer Company in 2013, which negatively impacted our total production levels, resulting in a much higher GHG intensity for the group.

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CHAPTER 5

CONCLUSION

5.1 Introduction

The overarching objective of this dissertation is to examine the economic and behavioral implications of CSR reporting regulations and standards. The focus of prior research has been predominantly the causes and consequences of CSR reporting in *voluntary* settings. This dissertation expands research on CSR reporting by considering the implications of CSR reporting regulations. This Chapter summarizes the main research findings of the studies in this dissertation. The Chapter also discusses the implications of these findings to theory, policy issues, and practice. Finally, the Chapter highlights several limitations which raise important opportunities for future research.

5.2 Summary of Research Findings

This dissertation contains three distinct studies with a focus on CSR reporting regulations. The first study in Chapter Two reviews over 100 empirical studies in accounting, finance, economics, law and management to evaluate consequences of CSR reporting regulations. Specifically, Study One assesses the impact of the regulations on (1) reporting quality, (2) capital-markets and (3) firm behavior. Study One also describes key developments and regulatory objectives of the CSR reporting regulations across countries and finds that the regulations (i) reflect the socio-economic development of the countries and (ii) vary systematically across countries. The review highlights that most countries implement CSR reporting regulations that contain 'comply-or-explain' clauses.

Despite the comply-or-explain nature of the regulations, studies find strong adverse capital-market reactions around legislative events leading up to the CSR reporting

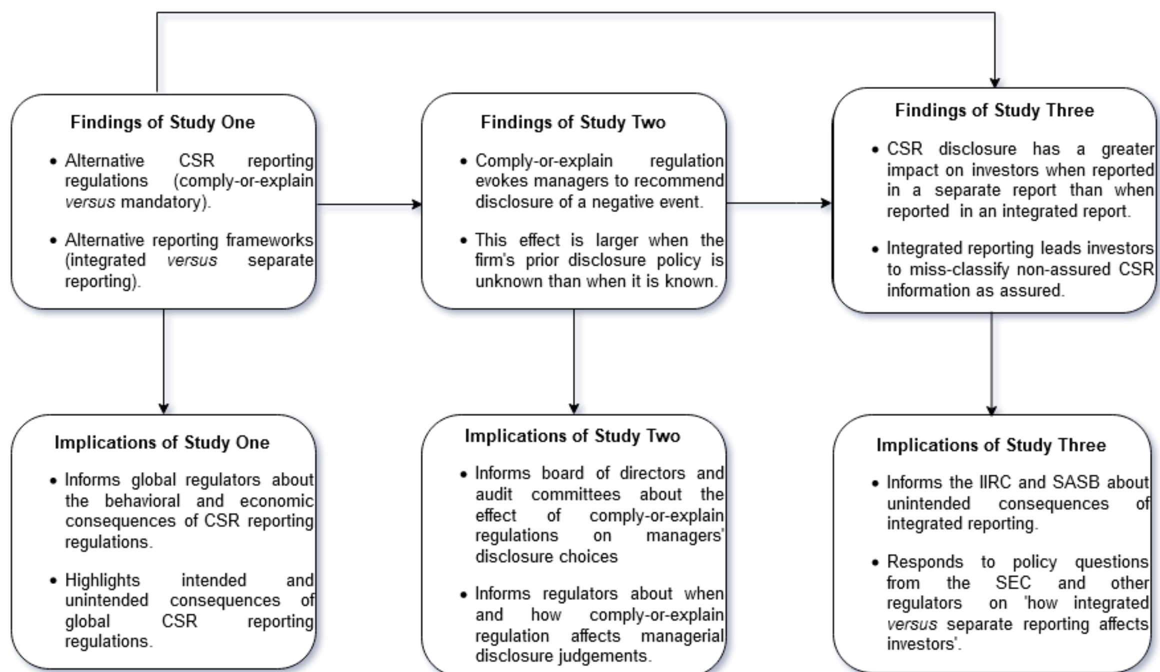
regulations. A separate line of archival research documents evidence supporting real effects, consistent with the CSR reporting regulations changing firm behavior. However, reporting quality appears to have remained low after the regulations. One important insight from the first study in this dissertation is that the shift from voluntary to mandatory CSR reporting has affected real operational activities of affected firms, which in turn give rise to social externalities.

Study Two in Chapter 3 builds on the insights from Study One and examines whether comply-or-explain regulation affects managers' evaluations of new disclosure matters affecting the firm's underlying economics, and how comply-or-explain regulation interacts with the firm's prior disclosure norms (known to be biased toward no disclosure *versus* unknown). Using an experiment with experienced managers, Study Two shows that managers are more likely to make disclosure of a negative event in a comply-or-explain regime than in a voluntary regime, and that this effect is greater when the firm's prior disclosure policy is unknown than when it is known to be biased toward less disclosure. Further analyses suggest that the effect of comply-or-explain regulation on managers' disclosure judgements operates through managers' perceived accountability.

The final and third study in Chapter 4 examines how integrating CSR performance measures in financial reports relative to reporting in separate standalone reports affects investors' firm value estimates. Category construction theory in cognitive psychology predicts that integrated (separate) reporting causes investors to adopt a unidimensional (multidimensional) perspective, which consequently decreases (increases) the vividness of CSR information. Results of Study Three are consistent with this theoretical prediction. Also consistent with this theory that categories trigger people to treat items of the same category as equivalent, Study Three shows that more investors misclassified CSR information as assured when integrated in a financial report relative to when reported in a

separate report. Consequently, misclassifying investors rated CSR disclosure credibility higher and derived significantly higher firm value estimates compared to investors who correctly classified this information as non-assured. Collectively, the findings of Study Three highlight potential costs of integrated reporting and suggest that integrating CSR information in financial reports diminishes CSR performance and affects investors' perceived assurance of CSR information. Figure 5.1 below provides a summary figure integrating the studies of this dissertation.

Figure 5.1: A summary figure integrating the studies of the dissertation



Note: Figure 5.1 summarizes and integrates the three studies of this dissertation. Insights from Study One that CSR reporting regulations are heterogeneous across countries and give rise to alternative CSR reporting frameworks inform Study Two and Study Three. Also, results from Study Two that experienced corporate managers recommend disclosure of a negative CSR event affecting the firm's underlying economics in a regulatory context inform the experimental design of Study Three. Collectively, the results of this dissertation inform global regulators, standard-setting bodies, and the business community.

5.3 Research Implications

5.3.1 Theoretical Contributions

The studies in this dissertation offer a number of theoretical contributions. First, research in psychology and accounting has long demonstrated that people – including accounting professionals – engage in motivated reasoning to arrive at conclusions consistent with pre-existing preferences (Ditto and Lopez 1992; Kadous, Magro, and Spilker 2008; Kunda 1990; Wilks 2002). Study Two in Chapter 3 provides evidence suggesting that comply-or-explain disclosure regulation may constrain motivated reasoning of managers. Specifically, comply-or-explain regulations may constrain managers' motivated reasoning through the *explain* clause by increasing managers' perceived accountability. Prior psychology and legal research demonstrate that reason writing - or the pressure to justify one's decision to others - increases human cognitive process and makes people become more accountable when making decisions (Liu 2018; Sieck and Yates 1997; Tetlock 1983). Thus, reason writing reduces decision bias (Cohen 2015; Oldfather 2007; Paxton, Ungar, and Greene 2012; Posner 1995). Therefore, Study Two in this dissertation provides theory-consistent debasing mechanism (i.e., reason writing) that potentially constrains motivated reasoning in corporate disclosure settings.

Second, accountability theory posits that subordinates confirm to the known preferences of their supervisors (Lerner and Tetlock 1999). Study Two considers a setting where there is a conflict between the preferences of subordinates and supervisors, and shows that subordinates may not confirm to the known preferences of their supervisors when they have their own preferences.

Finally, Study Three in Chapter 4 contributes to the theory of category construction in psychology. Category construction theory suggests that categories trigger perspectives, such that people adopt a "unidimensional" perspective or "multidimensional" perspective

(Medin, Wattenmaker, and Hampson 1987; Spalding and Murphy 1996). Study Three reports the results of an experiment in a firm valuation setting examining the impact of integrating CSR performance measures in financial reports relative to reporting in separate reports. Consistent with category construction theory, the results indicate that alternative reporting formats can cause investors to adopt a unidimensional or multidimensional perspective. An important theoretical contribution is that effects of categorical cues extend to firm valuation settings, which has not been examined in prior research.

5.3.2 Policy Contributions

As noted in Study One in Chapter 2, an increasing number of countries have mandated CSR reporting for all or a subset of listed firms (Christensen, Hail, and Leuz 2019; Ho 2017). Specifically, regulators in several jurisdictions such as the EU, India, Singapore and South Africa have introduced CSR reporting regulations that contain comply-or-explain clauses. Other countries such as China and the UK adopted mandatory CSR reporting requirements. However, other regulators such the SEC remain critical of adopting CSR reporting requirements (SEC 2010, 2016). In a public release, the SEC sough public feedback for several policy questions including “If we were to adopt specific disclosure requirements involving sustainability or public policy issues, how could our rules elicit meaningful disclosure on such issues?” (SEC 2016, p. 213). In addition, the commission expresses a concern that adopting line-item CSR disclosure requirements could cause registrants to disclose information that is not material to investors. Based on this concern, the SEC seeks feedback for the question of “How could we create a disclosure framework that would be flexible enough to address such issues as they evolve over time?” (SEC 2016, p. 213).

Study Two address these questions in an experiment with experienced corporate managers. Specifically, Study Two examines the impact of comply-or-explain disclosure regulation on managers' evaluations of negative disclosure events affecting the firm's underlying economics, and whether the firm's prior disclosure norms moderates effects of comply-or-explain regulations. The results indicate that managers are more likely to make disclosure of a negative event in a comply-or-explain regulation relative to a voluntary regime. The positive effect of comply-or-explain disclosure regulation on mangers' disclosure recommendations is greater when the firm's prior disclosure policy is unknown than when it is known to be biased toward no disclosure. The results also indicate that managers' personal views on CSR issues interact with comply-or-explain regulations, such that managers are more likely to make disclosure of a negative event when they are personally supportive of CSR issues than when they are not. These findings inform the SEC and other global regulators that the effectiveness of the comply-or-explain as a disclosure regulation is contingent on pre-existing firm *and* personal preferences toward CSR disclosure issues.

Study Three addresses existing policy questions on how integrating CSR performance measures in financial reports affects investors' judgements. Regulators in South Africa and the UK have mandated integrated reporting while regulators in other countries such as China and Singapore require public listed firms to publish a separate CSR report. Regulators in Australia and the EU are flexible about CSR reporting format so long firms disclose mandated CSR information. In addition, the SEC is presently seeking public feedback on the question of "How important to investors is integrated reporting, as opposed to separate financial and sustainability reporting?" (SEC 2016, 214). Motivated by the ongoing interest across the world by standard setters and regulators into integrated reporting, Study Three examines how integrating CSR performance measures in financial

reports relative to reporting in separate CSR reports affects investors' firm value estimates. The results reveal that CSR performance measures have greater impact on investors' firm value estimates when reported in a separate report than when integrated in a financial report. Further analyses indicate that more investors misclassified CSR performance measures as assured, consequently arriving at higher CSR disclosure credibility and firm value assessments. These results should be informative to the SEC and other global regulators as they consider alternative CSR reporting frameworks. Specifically, as more and more firms incorporate non-assured CSR performance measures in their financial reports or obtain assurance on 'selected' CSR indicators, regulators may want to consider mandating firms to explicitly label their CSR measures as 'non-assured' or 'assured' to mitigate investors potentially misclassifying these non-assured CSR measures as assured.

5.3.3 Practical Contributions

The studies in this dissertation also offer several practical contributions. One of the findings in Study Two is that managers' personal views on CSR issues influence their disclosure judgements. This finding has important implications for board of directors and audit committees relying on managers' CSR disclosure recommendations. Specifically, while CSR activities and disclosures reflect corporate actions, "it is the individuals within firms who actually create, implement, sustain, or avoid such policies and act" (Christensen, Mackey, and Whetten 2014, p. 165). Board of directors and audit committees may therefore want to understand managerial CSR preferences to ensure that CSR disclosure decisions are optimal and informative to relevant stakeholders.

Study Three reveals that investors misclassify CSR performance measures as assured when integrated in financial reports relative to when reported in separate reports, consequently increasing investors' perceived disclosure credibility and firm value

estimates. This finding has practical implications for users of financial reports and CSR assurance providers. The findings highlight to the users of financial reports to be cautious of performance metrics in financial reports since all performance indicators are not necessarily audited. For CSR assurance providers, the findings imply that firm managers may strategically obtain assurance for selected CSR performance indicators to influence investors' perceptions of other non-assured CSR performance measures. As such, CSR assurance providers may want to specify which CSR performance measures they have audited in their assurance statement to avoid potential lawsuit of investors.

Finally, the results of Study Three has important implications for the integrated reporting campaign and CSR reporting standard-setting. Specifically, nongovernmental bodies such as the International Integrated Reporting Council (IIRC) and the Sustainability Accounting Standards Board (SASB) continue to promote integrating financially-material CSR performance measures in regulated financial reports. However, Study Three shows that CSR performance measures have greater impact on investors when reported in separate reports compared to when integrated in financial reports.

5.4 Research Limitations

The results and implications of the studies in this dissertation should be interpreted in light of several limitations. Study Two and Three of this dissertation use experimental method. A comparative advantage of the experimental approach over other methods such as archival method is the ability to provide empirical evidence on an *ex ante* basis to standard-setting bodies and regulators on proposed changes to existing reporting standards and regulations (Elliott 2015; Kachelmeier and King 2002; Libby, Bloomfield, and Nelson 2002). This is important because *ex ante* empirical evidence informs the design of new regulation by highlighting the intended and unintended consequences of new regulation, thus potentially

mitigating the costs of unintended consequences (Kachelmeier and King 2002; Leuz and Wysocki 2016). Nonetheless, experimental researchers face a trade-off between internal and external validity, and often maximize internal validity at the expense of external validity (Bloomfield, Nelson, and Soltes 2016; Elliott 2015). As such, the studies of this dissertation relied on simplified but tightly controlled experimental setting to maximize internal validity. Elliott (2015, p. 529) notes that "[While the simplified experimental setting may not precisely mimic the real environment in which individuals make these judgments and decisions, the simplification is an advantage rather than a disadvantage[89]".

As CSR reporting regulations mature, future research using alternative research methods may expand on the findings of this dissertation in several ways. First, despite the growing popularity of comply-or-explain disclosure regulations worldwide, empirical evidence on this type of disclosure regulation is still scarce (Christensen, Hail, and Leuz 2019). This includes the effect of comply-or-explain regulations on reporting quality, capital-markets and/or firm behavior. Second, as more and more firms integrate their CSR performance measures in regulated financial reports (Cohen et al. 2012; KPMG 2017), future research could examine whether more integrated reporting affects reporting complexity. Finally, the integrated reporting literature has largely focused on capital-market reactions to integrated reporting (Barth et al. 2017; Lee and Yeo 2016). Little is still known about the real effects of integrated reporting, specifically whether CSR performance of affected firms changes as a result of mandated integrated reporting (Christensen et al. 2017; Downar et al. 2019).

[89] This is because the experimental method exhibits randomization, tightly controlled setting and manipulate factors specified by theory while extraneous information is removed from the environment (Elliott 2015).

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