MEDIA COVERAGE OF NEGATIVE ENVIRONMENTAL, SOCIAL AND GOVERNANCE ISSUES AND ANALYSTS CASH FLOW FORECASTS

A dissertation submitted

To Kent State University in partial

Fulfillment of the requirements for the

Degree of Doctor of Philosophy

by

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December, 2019

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Abstract

Financial analysts have increasingly investigated a wide variety of nonfinancial factors to better understand their potential impact on the valuation of a firm. This dissertation examines whether a firm's negative environmental, social and governance (ESG) issues covered by media influences the assessment of financial analysts regarding its future prospects. Specifically, I investigate whether a firm's media coverage of its ESG activities has an impact on analysts cash flow forecasts and cash flow forecast accuracy. I provide evidence that corporate social irresponsibility (CSI) coverage of ESG issues is negatively associated with analyst issuance of cash flow forecasts. I also find that firm's CSI coverage of ESG issues is negatively related with the firm's analyst cash flow forecast accuracy. The results hold for additional tests including propensity score matching models and Heckman's two-stage analyses. However, I do not find strong evidence that a firm's media coverage of environmental issues, social issues or governance issues is positively related with the firm's analyst cash flow forecast accuracy. Using Liu (2006)'s liquidity-augmented capital asset pricing model (LCAPM), I find that a firm's media coverage of ESG issues is positively related with accounting-related liquidity risk, indicating that investors may expect higher compensation for liquidity risks when they invest in firms which receive higher CSI coverage. Additionally, I find that analyst's decision to issue a cash flow forecast does not play a role in the relation between media coverage of ESG issues and accounting-related liquidity risk.

This dissertation provides insights into the link between CSI information and information asymmetry by examining the relation between the third-party-disclosed negative ESG information and accounting-related liquidity risk. The findings of this study have implications for managers, investors, financial analysts, regulators and other market participants.

Keywords: Media coverage; Corporate social responsibility; financial analysts; cash flow forecasts; liquidity risk; stakeholder theory; agenda setting theory

ACKNOWLEDGEMENTS

First and foremost, praises and thanks to the God, the Almighty, for His endless blessings and compassion throughout my PhD journey to complete the degree successfully.

Second, I would like to express my deep and sincere gratitude to my research supervisor and my dissertation chair Dr. Pervaiz Alam for giving me the opportunity to do research and providing invaluable guidance throughout this research. I cannot express enough thanks to my committee for their continued support: Dr. Indrarini Laksmana, Dr. Chris Groening and Dr. Dandan Liu.

I am indebted to my parents, Dongmei Liu and Caiyu Hua for their constant care with patience, motivation and sacrifice during the PhD program. I am grateful my husband Rohitkumar R. Challa for his love, friendship, empathy, and great sense of humor. I also thank my daughter Ditya for the joy and happiness she brings to my life. My special thanks are given to my relatives and friends who show understanding, faith and continuous prayers.

Last but not the least, it has been a great pleasure and honor to work with outstanding business faculty at Kent State University, including Wei Li, Wendy Tietz, Jessica (Osgood) Buchanan and Shunlan Fang.

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Chapter 1: Introduction

1.1 Background

The demand for cash flow information and cash flow forecasts increased substantially following the accounting scandals identified in the early 2000's (Edmonds et al. 2011). These scandals eroded investor confidence in the capital markets and reflected that earnings alone do not always predict future firm performance consistently and reliably (Jain & Rezaee, 2006). In contrast, cash flow information is arguably perceived as being more concrete and less susceptible to artificial manipulations than "pro-forma" or actual reported earnings (Edmonds et al. 2011) and thus is helpful in assessing firm value (Ali 1994; Rayburn 1986; Wilson 1986). Analysts' cash flow forecasts are becoming more common. Analysts provide cash flow forecasts along with earnings forecasts because cash flow information is useful in understanding the implications of current earnings on future cash flows and in assessing the financial conditions of companies (e.g., Pae and Yoon 2012). Analysts are generally considered to be sophisticated users of financial information who have superior ability in providing high-quality information (Chava, Kumar, & Warga 2010). There is plenty of evidence that the information provided by analysts through their earnings forecasts, recommendations, and reports is used by market participants and that such output influences stock prices (e.g., Abarbanell & Lehavy, 2003; Asquith, Mikhail, & Au, 2005; Athanasakou, Strong, & Walker, 2009; Beaver et al., 2008; Brav & Lehavy, 2003; Dontoh, Ronen, & Sarath, 2003; Francis & Soffer, 1997; Lys & Sohn, 1990; Stickel, 1995).

Market participants use analysts' forecasts because analysts process and transform the information set in financial statements along with additional information about the industry, firm strategy, and economy into future earnings predictions (Wieland, 2011). Extensive disclosure

helps financial analysts generate valuable new information, such as more precise forecasts and buy/sell recommendations, resulting in increasing demand for their services (Healy and Palepu, 2001). What's more, prior studies have proven that the accuracy of the forecasts improves if additional financial information is disclosed (Lang and Lundholm 1996; Core 2001; Hope 2003; Tong 2007; Lawrence 2013). However, the increasing asymmetry between financial reporting and firm value results from the declining ability of financial reporting information to signal and report information that is useful in assessing firm value and management performance (Yen 2004). The importance of tangible assets within corporations markedly decreased as countries shifted to information and service economies. Indeed, traditional financial statements do not fully inform management and investors about the value of firm reputation, quality, brand equity, safety, workplace culture, strategies, and other assets that are more significant than ever in a knowledge-based global economy. Intangibles assets account for a significant proportion of the value of a company, especially in the long term.

There is an increased demand for ESG information, which pressures managers to disclose more corporate social responsibility (CSR) information (Holder-Webb et al. 2009). CSR is an intangible corporate asset that aligns the long-term interest of all stakeholders with that of shareholders and in the long run is beneficial for shareholders (e.g., Russo and Fouts, 1997; Freeman, Wicks, and Parmar, 2004; Fatemi, Fooladi, and Tehranian, 2015). As market interest in the transparency of a firm's ESG performance and practice is large and growing (Eccles, Serafeim and Krzus 2011), ESG performance has been considered as a vital factor to assess a firm's value as this performance directly and indirectly affects the future viability and financial performance of the firm and the consequences for its investors (UNEP 2007). The extent to which a firm is exposed to its ESG issues is now a matter of great interest to financial market

(e.g., investors, financial analysts), product (e.g., suppliers, customers) and labor market participants. In that regard, CSR disclosure may help to reduce the information asymmetry between a firm's managers and its external stakeholders (Cormier and Magnan 2011). According to the United Nations (UN) Sustainable Stock Exchange (SSE) initiative, all large companies are expected to report their impact from environmental and social practice by 2030 at the latest (SSE, 2015). As more companies engage in CSR activities and report CSR information disclosures, the number of reporting agencies which assess ESG performance has also increased (Scalet and Kelly 2010).

Nowadays, analysts have increasingly probed a wide variety of nonfinancial factors to better understand their potential impact on the valuation of a firm. Empirical studies provide supportive evidence that analysts use non-financial information (i.e., CSR information) in their earnings forecasting tasks (Nichols and Wieland 2009; Orens and Lybaert 2007; Simpson 2010) and use both financial and nonfinancial information interactively (Coram, Mock, and Monroe 2011; García-Meca and Martinez 2007; Ghosh and Wu 2012; Maines, Bartov, Fairfield, and Hirst 2002; Orens and Lybaert 2010; Simpson 2010; Pflugrath, Roebuck, and Simnett 2011). Previous studies show that analysts are found to be attracted to firms that actively engage in CSR activities, which provide additional information that can improve the reputation of a firm (Shane and Spicer 1983; Ioannou and Serafeim 2014; Luo et al. 2014). Prior literature has also shown that the issuance of separate CSR reports increases earnings forecast accuracy (Dhaliwal et al. 2012). Consequently, nonfinancial information allows analysts to play in an intermediary role between firms who disclose the nonfinancial information and the market. The supply of ESG information from CSR reporting (i.e. firms' CSR disclosures and third-party issued CSR information) affect the value of the information disclosed and the extent to which investors

demand advice form analysts (e.g., Lee et al. 2018). I focus on corporate social irresponsibility-related (CSI)[1] information and explore the mechanism by which it affects analysts' forecasting tasks.

1.2 Research Questions

This dissertation examines if a firm's negative environmental, social and governance (ESG) issues covered by media affects the assessment of the firm's future prospects by financial analysts. I assert that information asymmetry between firms and stock market participants is to some degree an illustration of information asymmetry between firms and stakeholders beyond stock markets. Similar to Cormier and Magnan (2014b), I argue that the relationship between a firm's environmental, social and governance (ESG) issues, disseminated by media, and information asymmetry rests on 1) the transformation of investors' expectations of the impact of corporate social responsibility (CSR) actions, 2) a realization that effective risk management underlies a firm's long-term performance and growth, 3) the contribution by different types of risk to information uncertainty. Specifically, I explore whether there is an impact of a firm's media coverage on analyst cash flow forecasts. I also investigate the role of analysts' cash flow forecasts in relation with media coverage of ESG issues and accounting-related liquidity risk. This question is also sub-divided into two issues. The first issue is the relation between media coverage of ESG and accounting-related liquidity risk. Inspired by Lambert et al. (2007)'s theoretical work on the effect of information quality on the liquidity risk, I investigate the impact of media coverage of ESG issues on accounting-related liquidity risk. The second issue is the

[1] I use media coverage of ESG issues or CSI interchangeably in the dissertation.

role of analyst cash flow forecasts and the relation between media coverage of ESG issues and accounting-related liquidity risk.

1.3 Motivation and Recent Literature

In recent years, firms have undertaken an increasing number of corporate social responsibility actions (Carroll, 1979; Waddock & Graves, 1997; Hillman & Keim, 2001) to respond to growing institutional pressures for responsible performance, community participation, increased transparency, higher labor standards, reduced environmental pollution, and other social and environmental causes (Campbell, 2007; Waddock, 2008). The reason is that corporate managers and directors are expected to consider ESG dimensions of every decision they make. Firms respond to such pressures by taking actions aimed at external stakeholders as well as those that target shareholders. These actions may be taken proactively to mitigate the risk of potential stakeholders' criticism or to integrate stakeholders' demands and expectations into the firm's operations, structures, and processes (Fiss & Zajac, 2006; Crilly, Zollo, & Hansen, 2012; Neumann, Cennamo, Bettinazzi et al., 2013) and/or reduce the potential for stakeholder sanctions (Kolbel, Busch and Jancso 2017). With the advent of socially responsible investment, socially responsible practices have become an increasingly important determinant for long-term prosperity of economic entities (Clarkson, 1995; Hillman & Keim, 2001; Eccles, Ioannou, & Serafeim, 2014). What's more, the investment community's perceptions of ESG information has changed dramatically and motivated managers to disclosure their CSR efforts to investors (Lee, Palmon, and Yezegel 2018). For example, Ioannou and Serafeim (2015) provide evidence that in the early 1990s, analysts issued more pessimistic recommendations for firms that exhibited high CSR ratings. During the post-2003 period, analysts started issuing more optimistic stock

recommendations for firms with better CSR performance. Their study suggests that CSR ratings are known to influence assessments of future financial performance.

Luo et al. (2014) document that financial performance effect of corporate social performance can be better materialized and realized when security analysts incorporate firm social performance information, suggesting that these analysts are more likely to be catalysts that help establish the relationship between shareholder investment returns and firm socially responsible activities targeting broader stakeholder groups. Lee et al. (2018) provide evidence of an inverse relationship between the value of both upgrade and downgrade revisions and the supply of CSR-related information released by third-party institutions, suggesting that CSR-related information is associated with a richer information environment that makes it more challenging for analysts to issue informative recommendations. As for the relationship between CSR and analysts' information environment, recent literature also documents that positive CSR performance of a firm attracts more analysts and make analysts generate more accurate earnings forecasts. For example, Dhaliwal et al. (2011, 2012) find that firms with higher CSR ratings attract dedicated analyst coverage and analysts have lower earnings forecast errors and lower earnings forecasts dispersion for firms with good CSR disclosure. Bhandari and Kohlbeck (2018) argue that CSR practices are value relevant and firms with weaker social responsibility actions are characterized by less reputation, high risk, high information asymmetry, and non-transparent disclosures. They show that analyst following, and consensus analyst earnings forecast accuracy are related to the amount of CSR activities disclosed. Specially, they provide evidence that analyst following, and consensus forecast accuracy increase and that dispersion among consensus analyst forecasts and revision volatility decrease as the degree of positive CSR activities increases. All these studies are consistent with the notion that CSR disclosure and CSR

performance help increase analysts' earnings forecast accuracy and thus reduce information asymmetry in the stock market, however, none of these studies examine analyst forecast accuracy of an alternate performance metric – cash flow forecasts.

1.4 Identification of Research Problems and Research Methods

Analysts provide cash flow forecasts along with earnings forecasts because cash flow information is useful in helping investors interpret earnings (e.g., DeFond & Hung, 2003, 2007; Pae and Yoon 2012; Call, Chen, and Tong 2009, 2013;Hashim and Strong 2018) and researchers argue that cash flow is a better metric than earnings for assessing the liquidity and solvency of a firm (Defond & Hung, 2003; Graham, Harvery, & Rajgopal, 2005). Cash flow forecasts are incrementally useful to earnings in valuing securities (Bowen, Burgstahler, & Daley, 1987; Harris, Lang, & Moller, 1994; Lang et al., 2004; Schipper, 1991; Mohanram 2014; Radhakrishnan and Wu 2014) and serve as an additional monitoring device for firms with poor earnings quality (McInnis and Collins 2011). However, none of these studies did not address whether nonfinancial information has an impact on analyst cash flow forecasts. I predict the relationship between media coverage of ESG issues and analyst cash flow forecasts based on stakeholder theory. Instrumental stakeholder theory suggests good management implies positive relationships with key stakeholders (Waddock and Graves 1997; McGuire et al. 1988; Ullman 1985) as it suggests that meeting the needs of diverse stakeholders will lead to favorable financial performance (Freeman 1984). Drawing on stakeholder theory, Kölbel et al. (2017) argue that media coverage of ESG issues provides conditions that are conducive to stakeholders' sanctions and increase the potential for stakeholder sanctions on firms' irresponsible actions on ESG practices because media, as an important channel, reduces the constraint of stakeholders

limited attentive capability. Kölbel et al. (2017) also argue that media coverage of ESG issues increase the occurrence of stakeholder sanctions against one specific firm as the media coverage draws stakeholders' attention to those particularly irresponsible actions related to ESG issues (Lang and Washburn 2012). I posit that the media coverage of ESG issues for a firm may relate to the level of information asymmetry between the firm and other stakeholders (Cormier and Magnan 2017) due to the negative effect on the firm's future financial performance (Jensen, 2001), increased financial risk (Kolbel et al. 2017), weak social responsibility actions and ethical concerns of management (Kim et al. 2012). Information asymmetry increases uncertainty surrounding the firm's underlying earnings and compromises stakeholders' ability to correctly evaluate and predict the firm's future earnings and performance, thereby incentivizing analysts to issue cash flow forecasts along with earnings forecasts. I predict that a firm's media coverage of ESG issues is positively related with the incidence and likelihood of analyst cash flow forecasts. I use a logit model to examine the relation between media coverage of ESG issues of a firm and analyst's decision to issue a cash flow forecast for the firm.

Cash flow forecast accuracy is also important because both cash flow and earnings information is incrementally useful in assessing firm value (Ali, 1994; Rayburn, 1986; Wilson, 1986). Financial analysts forecasting performance would also be important to analysts because their career and reputation depend on forecasting performance (Pae and Yoon 2012). The career outcomes of analysts who forecast both earnings and cash flows are influenced by forecast accuracy (Hong and Kubik 2003; Call, Chen, & Tong, 2009; Pandit, Willis, & Zhou, 2012). Since media coverage of ESG issues provides additional nonfinancial information with respect to firms' ESG practices, the related events and incidents reported by the media may reduce analysts' information acquisition costs in their forecasting tasks and may improve their cognitive

ability to interpret information. If analysts have the ability to identify the implications of media coverage of ESG issues for predicting future cash flows, then their cash flow forecasts should be more accurate. I predict that a firm's media coverage of ESG issues is positively related with the firm's analyst cash flow forecast accuracy. Following Kim, Kross and Suk (2015), I examine the impact of a firm's exposure to ESG risk on cash flow forecast accuracy.

Agenda-setting theory suggests that media coverage of ESG issues coordinates the attention of various stakeholders on a specific ESG issue at a specific firm and this media coverage increases the salience of the issue in the public agenda (Carroll and McCombs 2003; McCombs and Shaw 1972; Tang and Tang 2016). Agenda-setting theory suggests that media coverage increases the potential of stakeholder sanctions because the more stakeholders within a firm's stakeholder network that draws attention to a specific firm's ESG issues, the larger number of stakeholders that decide to sanction the firm (Kölbel et al. 2017). Kölbel et al. (2017) argue that the reach of the media outlet influences the agenda-setting effect of the media coverage of ESG issues and the reach of negative ESG issues coverage determines the number of stakeholders who draw attention to ESG issues and may affect the potential of stakeholder sanctions on firms' future expected earnings. Kölbel et al. (2017) also argue that the more severe media coverage of ESG issues, the more decisive corporate social irresponsibility attribution and thus more harsh stakeholder sanctions. The severity of ESG issues coverage reflects CSI attribution that explains why firms should be blamed for CSI actions and the severity also increases the potential for stakeholder sanctions (Kolbel et al. 2017). Therefore, I consider both the reach of the media outlet and the severity of media coverage of ESG issues as two important characteristics of media coverage of ESG issues in testing the impact of a firm's exposure to ESG risk on cash flow forecast accuracy.

If media coverage of ESG issues generally provide benefits to investors by reducing information asymmetry in the equity market, then the next question is how do investors affect the equity market when they receive negative information about a firm's ESG issues covered by the media? Investors have imperfect information about the firms they invest in (Greenwald and Stiglitz 1990). This makes the role of external information providers such as RepRisk AG more salient as they provide new information about firm ESG performance to investors (Ramchander et al. 2012). I investigate the role of analysts' cash flow forecasts in relation with media coverage of ESG issues and accounting-related liquidity risk. This question is also sub-divided into two issues. The first issue is the relation between media coverage of ESG and accounting-related liquidity risk. Kolbel et al. (2017) provide evidence that media coverage of ESG issues increases financial risk, suggesting that these media coverage may affect direct cash flow consequences, altering the firm's ratio of the future cash flows to the covariance with all the cash flows in the market, i.e. the liquidity risk. Lambert et al. (2007) show that accounting information quality can influence cost of capital either directly through liquidity risk. Since media coverage of ESG issues demonstrates the risk-generating effect of CSI coverage through potential for stakeholder sanctions which may result in lower earnings, firms may distort accounting information quality and eventually affect liquidity risk. Inspired by Lambert et al. (2007)'s theoretical work on the effect of information quality on the liquidity risk, I investigate the impact of media coverage of ESG issues on accounting-related liquidity risk. The second issue is the role of analyst cash flow forecasts and the relation between media coverage of ESG issues and accounting-related liquidity risk. I follow Liu (2006)'s liquidity-augmented capital asset pricing model (LCAPM) which links expected returns with a stock's market risk and liquidity risk to measure liquidity risk. I examine the relation between a firm's media coverage of ESG issues and accounting-

related liquidity risk and examine the role of analyst cash flow forecasts and the relation between media coverage of ESG issues and accounting-related liquidity risk.

1.5 Media coverage of ESG Issues and Data Sources

Existing CSR studies focusing on analysts and the use of CSR information have integrated CSR and CSI into a single construct by combining "strength" and "weakness" scores of the Kinder, Lydenberg, and Domini (KLD) dataset into a unitary CSR score. Such a summary measure that combines both CSR and CSI information may mix the initial driver of potential for stakeholder sanctions caused by CSI with its subsequent mitigation measure. Hsu et al. (2018) suggests that separating the two constructs reveal a striking result. They investigate stock price reactions surrounding announcements of earnings and management earnings forecasts. Hsu et al. (2018) find that only adverse CSR performance affects investors' assessments of these corporate disclosures. In contrast, they find that both positive and adverse CSR performance affect analysts' forecast revisions surrounding announcements of earnings and management earnings forecasts. Hsu et al. (2018) also show that firms with adverse CSR performance exhibit lower disclosure quality and earnings persistence. However, they do not find that firms with positive CSR performance exhibit higher levels of disclosure quality and earnings persistence. This result is consistent with investors, but not with analysts' assessment of the effect of positive CSR performance on earnings-related corporate disclosures. Although Hsu et al. (2018) isolate CSI empirically from CSR, they do not reflect what is theoretically different about CSI or explain why analysts focus more on those associated with negative ESG practices or CSI. Furthermore, many studies do not separate CSR from its negative counterpart, CSI, and differentiate between them. CSI is a distinct theoretical construct (Lange & Washburn, 2012; Strike, Gao, & Bansal,

2006). Prior studies that distinguish between the two constructs show that CSI exacerbates risk more strongly than CSR mitigates it (Chava, 2014; Goss & Roberts, 2011; Oikonomou & Pavelin, 2014). This suggests that the insurance hypothesis[2] should be extended with an explanation of how risk emerges from CSI. Therefore, I focus on CSI of firms.

CSI in this dissertation is based on a third-party evaluation of negative firms' ESG issues, while CSR information comes from corporate voluntary disclosures which are usually distributed in CSR reports and corporate websites. There are several advantages of media coverage of ESG issues. First, it is an important channel for spreading information about firms' ESG practices and it represents a wider public than firms' CSR disclosures. Second, media is a source of information, which is known to the public including investors. Third, the measures of media coverage of ESG issues are unique and allows an examination of media attention and its consequences (Burke et al. 2019). I posit that firms' ESG issues coverage by media are salient to capture analysts' interest as the media can exert big influence on corporate behavior, in general, and CSR in particular (Baron, 2005; Berman, Wicks, Kotha, & Jones, 1999; Chen & Meindl, 1991; Fombrun & Shanley, 1990; Henriques & Sadorsky, 1999; Siegel & Vitaliano, 2007). It is well documented that the business press plays an important role as an information intermediary and that media coverage affects a firm's information environment (e.g., Tetlock et al., 2008; Fang and Peress, 2009; Engelberg and Parsons, 2011; Griffin et al., 2011; Dougal et al., 2012; Kim et al., 2014a). Kruger (2015) studies how stock markets react to positive and negative ESG events and provides evidence that investors respond negatively to negative events and weakly

[2] Godfrey (2005) argues that corporate philanthropy, a specific aspect of CSR, is a "positive moral capital that acts as character evidence on behalf of the firm" (2005: 788), when being caught performing a bad act. Godfrey et al. (2009) show that firms who engage in high level of CSR activities reduced losses after occurrence of negative events. Godfrey (2005,2009) suggest that risk management strategies that emphasize positive contributions toward the firm's stakeholders provide an insurance-like protection when a firm has potential liability or enforcement action. This may be because the firm's financial performance is less likely to be affected by negative events if it maintains the loyalty of its key stakeholders.

negatively to positive events. Aouadi and Marsat (2016) show that higher CSR score has an impact on market value (Tobin's Q) only for high-attention firms, located in countries with greater press freedom. Capelle-Blancard and Petit (2017) indicate that ESG reputation mitigates the loss and that market participants only react to information disclosed by the media and not to firm press releases. In other words, investors do not seem to be fooled by firms' impression management in CSR.

Following the risk response guidance from the Committee of Sponsoring Organization's (COSO, 2004) *Enterprise Risk Management* framework, Burke et al. (2019) provide evidence that auditors respond to media coverage of firms' ESG practices, consistent with the view that the importance of a firm's social influence on an auditor's risk assessment procedures is more dominant. Following Burke et al. (2019), I use RepRisk database to obtain media coverage of ESG issues.

RepRisk is a global research and business intelligence provider on ESG risks. RepRisk uses a proprietary algorithm to calculate the index based on the identified issues, the severity of the issues, the reach of media sources, and the frequency and timing of information. RepRisk database has been used by 100 global financial and corporate clients for risk management, compliance, supply chain, as well as supervision of reputation, peers, NGOs and ESG issues. ESG risks assessed by RepRisk are widely used by financial institutions, corporations, and regulatory organizations. Media coverage of CSI can translate into bottom-line impact because negative coverage by media reflect a corporation's actions towards critical ESG issues including environmental degradation, human rights abuses, corruption and fraud. These actions have greater impact on compliance risks, reputation risks, and financial risks. With daily updates, universal coverage, and adverse information on companies, projects, sectors, and countries,

media coverage of CSI measured by RepRisk, capture increased and rapidly changing stakeholder expectations towards ESG issues and leveraging stakeholder information supports transparency and informed decision-making. Due to the RepRisk's primary focus on the internet and social media, third-party information and stakeholders' information, media coverage of CSI measured by RepRisk reflect a highly transparent and connected world, which serves to increase stakeholders' expectations about ESG issues and serve conditions for stakeholder sanctions. Therefore, taking an external perspective on company operations, ESG risks provides valuable third-party stakeholders' information which can give insights into corporate' operations and can act as an early warning system and which can be perceived a reality check about corporate social performance.

The other data sources used for main regression models are Compustat for financial information, CRSP for stock return information, I/B/E/S for analyst forecasts information, Thomson Reuters Institutional (13f) Holdings database for institutional ownership information.

1.6 Findings

I provide evidence that a firm's media coverage of ESG issues is negatively associated with analyst decision to issue a cash flow forecast. This indicates that analysts are less likely to issue a cash flow forecast when a firm has higher CSI coverage. I also provide evidence that firm's media coverage of ESG issues is negatively associated with the firm's analyst cash flow forecast accuracy. The results hold for additional tests including propensity score matching models and Heckman's two-stage analyses.

Using accounting-related liquidity risk, I find support that a firm's media coverage of ESG issues is positively associated with accounting-related liquidity risk, indicating that

investors may expect higher compensation for liquidity risks that they bear when they invest in firms which receive higher CSI coverage. I also find that analyst's decision to issue a cash flow forecast does not play a role in relation to media coverage of ESG issues and accounting-related liquidity risk.

1.7 Contribution

This dissertation contributes to the extant literature in several ways. First, this dissertation adds to the literature on usefulness of analyst cash flow forecasts (e.g., DeFond and Hung, 2003; Givoly et al., 2009; McInnis and Collins, 2011; Yoo and Pae, 2011; Pae and Yoon, 2012; Call et al., 2013) by exploring the impact of media coverage of ESG issues on the incidence of analyst cash flow forecasts and analyst cash flow forecast accuracy. Specifically, my dissertation contributes to the existing literature on corporate financial and nonfinancial information and analysts' forecasting characteristics and behaviors. Many previous studies examine the relationship between financial disclosures and analysts' earnings forecasts (Lang and Lundholm 1996; Core 2001; Hope 2003; Tong 2007; Lawrence 2013) and some studies investigate whether CSR disclosures and reporting or CSR performance have an impact on analysts' earnings forecasts (Shane and Spicer 1983; Hong and Kacperczyk, 2009; Dhaliwal et al. 2012; Ioannou and Serafeim 2014; Luo et al. 2014). Other studies have examined the role of analysts in reducing information asymmetry associated with firm intangibles such as research-and-development and customer satisfaction (e.g., Kimbrough, 2007; Luo, Homburg, and Wieseke, 2010) and limited empirical analyses link a firm's CSR performance and disclosures to analysts (Dhaliwal et al., 2011, 2012; Ioannou and Serafeim, 2010; Luo et al. 2015). Becchetti et al. (2013) focus on individual analyst forecasts and document that CSR information classified as

accounting opacity, corporate governance, stakeholder risk, and overinvestment is associated with the absolute forecast error and its standard deviation at the individual analyst level. Bhandari and Kohlbeck (2017) expand on this research by exploring the impact of CSR activities on the number of analysts following the firm, consensus analyst earnings forecast accuracy, forecast dispersion, and forecast revision volatility. Adding to this line of research, my dissertation gives insights into the role of media coverage of ESG issues on analysts' cash flow forecasting. To the best of my knowledge, this is the first study that links CSR-related information to analyst cash flow forecasts. My dissertation contributes to the understanding of the economics of important products of analysts by exploring the effect of the media-based measure of CSI.

Second, my dissertation contributes to the current state of the research around the value relevance of CSI factors by showing that professional market participants such as analysts play an important role in processing ESG issues reported by the media and use them in their analyses about a firm's future financial performance and earnings growth. Whereas prior research on CSR studies tend to focus on the economic consequences of CSR disclosures with regards to financial performance, firm value, cost of capital, corporate governance, and financial reporting, there is limited research into whether and how CSI information drives the demand-or-supply-side forces of analysts' products. I focus my dissertation on negative news articles and risk incidents with regards to ESG issues only as it has been demonstrated that CSR strengths and concerns are conceptually different (Strike et al., 2006). In addition, the role of the media in communicating CSI information to the public has captured very limited attention in academic research (Dyck and Zingales 2002). My dissertation enhances the understanding of a media-based measure of CSI as it provides a new, dynamic perspective on CSR in the context of stakeholder management

(Kolbel and Busch 2013). A media-based indicator is based on weights that are assigned to different categories of CSR. These weights change across firms, industries and time periods. Different from an aggregated CSR rating, the media-based indicator is more dynamic with respect to different weights assigned to categories of CSR based on media attention. My work takes a different perspective by examining the under-researched issue of the relevance of firm's exposure to criticism by its stakeholders (i.e. media coverage of CSI) for financial analysts.

Third, my dissertation contributes to prior literature on the impact of firms' exposure to different dimensions of social responsibility on financial analysts' information environment as proxied by their ability to forecast a firm's cash flows. There is anecdotal and empirical evidence that both social disclosure (e.g., Downing, 1997; Cormier et al., 2009a; Cormier et al., 2009b) and environmental disclosure (e.g., Cormier et al., 2003; Barth and McNichols, 1994; Li and McConomy, 1999; Aerts et al., 2008) provide value-relevant information to capital markets. Existing literature shows that financial analysts may have different emphases on ESG issues. For instance, Nichols and Wieland (2009) show that analysts' information intermediary role is more important when firms disclose product-related non-financial information, which is closely related to firms' sales and future cash flows. Fieseler (2011) emphasizes that equity analysts consider environmental sustainability as long-term value-enhancing activity and stress on firms' environmental irresponsible activities. Cormier and Magnan (2011) explore the joint effect of social disclosure and environmental disclosure in reducing information asymmetry and Cormier and Magnan (2014) show that both CSR disclosure and good corporate governance increase analyst following and improve analyst earnings forecast precision. I directly perceive firms' negative environmental, social and governance-related issues released by media coverage as I believe that these issues of different dimensions are salient to market participants in the capital

markets about firms' CSR performance, management integrity and ethics, governance and information dynamics. My findings should be of interest to managers, regulators, and investors if they strive to assess a firm's exposure to ESG issues with stakeholders and exposure to ethical concerns.

Fourth, my dissertation adds to the understanding of the link between CSR performance and information asymmetry by examining the relation between third-party-disclosed ESG information and liquidity risk. The idea is if media coverage of ESG issues provides useful information to investors in general, investors should be responsive to these media coverage in their trading in the shares of the firms that exhibit different level of media coverage of ESG issues, which in turn affect the stock market liquidity in the firms' shares. My dissertation should answer whether media coverage of ESG issues provides benefits to investors by increasing the supply of CSR-related information to the public and thus reducing information asymmetry in the equity market. My dissertation also sheds light on the importance of separately considering both positive and negative CSR performance when exploring the effects of CSR-related information on the secondary implications in capital markets research.

The remainder of this dissertation is structured as follows: Chapter 2 is comprised of a literature review of analysts and ESG studies. Chapter 3 consists of hypotheses and research methodology.

1.8 Summary

This dissertation examines if media coverage of ESG issues has an impact on cash flow forecasts generated by financial analysts. I focus on analyst cash flow forecasts because prior related literature only provides evidence on the relationship between CSR-related disclosures and

analyst earnings forecasts. I first examine whether a firm's media coverage of ESG issues is associated with the likelihood and incidence of analyst cash flow forecasts. Next, I examine whether a firm's media coverage of ESG issues affect analyst cash flow forecasts accuracy. Investment community's perceptions of ESG information has recently changed dramatically (Lee, Palmon, and Yezegel 2018) and investors demand for more ESG information (Ballou, Casey, Grenier and Heitger 2012; Cohen, Holder-Webb, Wood and Nath 2012a). I then examine whether and how investors respond to media coverage of ESG issues. Inspired by Lambert et al. (2007)'s theoretical work on the effect of information quality on the liquidity risk, I investigate whether there is a link between media coverage of ESG issues and accounting-related liquidity risk.

This dissertation contributes to the understanding of the impact of ESG information on analyst decision making and should be of interest to corporations, analysts, investors, and regulators.

Chapter 2: Literature review

2.1 Literature Review

2.1.1 What is ESG/CSR?

Environmental, social and governance (ESG) issues have been experiencing increasing scrutiny recently. There is no clear understanding of ESG concepts although the terminology is employed in various contexts such as risk assessment, socially responsible investment, corporate responsibility. The term appears in the United Nations Principles of Responsible Investment[3]. The concept of ESG issues refers to information beyond financial information about the challenges and performance of a company on these matters. It is evident that the evaluation of ESG matters help a thorough understanding of the risks and opportunities a company faces. Some investors may consider an ESG analysis as one proxy for the quality of management.

Environmental, social, and governance issues indicate nonfinancial risks and opportunities, which can affect a company's performance over the medium to long term horizon (Harpo Ho 2016). The term "ESG" is now widely used by institutional investors and investment professionals to refer not only to measures of corporate sustainability or to environmental, social, or governance practices specifically, but to all nonfinancial essentials that can affect firms' financial performance, such as environmental practices, corporate governance, labor and employment standards, and human resource management etc. ESG information allows differentiated investment judgements by enabling investors to better assess risks and opportunities in the companies they invest. Trending environment, social and governance (ESG) issues has turned into a state of passion for investors, shareholders, and regulators as a risk management concern. Companies are coping with

[3] The Principles for Responsible Investment (PRI) founded in April 2006 by former UN Secretary General Kofi Annan in collaboration with 20 major institutional investors. The initiative consists of six principles to provide a framework to incorporate ESG issues into mainstream investment decision-making and ownership practices. By 2010, the PRI had grown into an alliance of more than 800 of the largest institutional investors and asset managers worldwide, representing some $22 trillion under management.

news concerning their social responsibility on a regular basis as ESG information becomes more prominent. Indeed, several investment banks have employed dedicated "ESG teams" to evaluate relevant issues and incorporate them into the equity analysis processes. Consulting firms have improved their ESG competencies to serve the growing demand from their pension-fund clients to address the importance of such matters. ESG-related activities are designed to reduce the firm's exposure to environmental and social risks (Clarkson, Richardson, and Vasvari 2011; Hansen and Mowen 2015; among others). These exposures include uncertainty surrounding product liability, pollution, waste, resource availability, corruption, and worker/public safety (Christensen 2016; Shrivistava 1995). In empirical research, these firms' activities are also called CSR because they improve environmental, social and economic performance with respect to stakeholder expectations, which may be proactive or reactive and may focus on internal or external factors (Aguinis and Glavas 2012). Companies report material information related to their financial, CSR performance and strategies because they believe that this information has significant strategies relevance (Cheng, Green and Ko 2015) and there is an increased demand for CSR information in assurance (Ballou, Casey, Grenier and Heitger 2012; Cohen, Holder-Webb, Wood and Nath 2012a).

There is extensive empirical evidence that CSR efforts and activities often translate into improvements in a firm's economic performance (e.g., Pava and Krausz, 1996; Wood and Jones, 1995; Griffin and Mahon, 1997; Roman et al., 1999; Richardson and Welker, 2001; Margolis and Walsh, 2003; Orlitzky et al., 2003; McWilliams et al., 2006; and Cormier et al., 2009c). The emergence of various social responsibility indices (e.g., Dow Jones Sustainability Indices) and the creation of sustainable development investment funds are two illustrations that CSR has become an important economic phenomenon. There are multiple definitions of CSR and related concepts and there is no single authoritative definition of CSR. Firms for social responsibilities defines CSR

as business strategic decisions linked to ethical values, compliance with legal requirements, and respect for people, communities, and the environment over the globe. Carroll (1991) defines CSR as the formulation and implementation of social goals, plans and programs and the integration of ethical considerations by firms into these decision-making, policies, and actions. Carroll (1979, p.40) describes CSR as follows: *"the social responsibility of business encompasses the economic, legal, ethical, discretionary (philanthropic) expectations that society has of organizations at a given point in time"*. This definition is the foundation of Carroll's pyramid of CSR (1991), which uses a 4-part conceptualization based on the idea that a company has obligations towards society. These obligations refer to not only legal and economic obligations, but also ethical and discretionary (philanthropic). Carroll (1999) analyzed how CSR had evolved to become a recognized multidimensional construct. A good CSR performance enables to enhance a firm's visibility and reputation within society, thus increasing its ability to recruit and retain the best employees and engage in long-term transactions with commercial stakeholders. Managers should also endeavor to minimize the impact of the firm's activities on the natural environment, thus contributing to society's sustainable development (Hart, 1997).

In general, CSR can be seen as a comprehensive set of policies and practices that are integrated into operations and decision-making processes throughout a company, including issues related to community and environmental concerns, business ethics, human rights, and employee standards and consumer rights. CSR aims to favor business pursuit of sustainable development integrated into a business model that reflects the economic, social, and environmental dimensions of a firm's activities as expressed by the triple bottom line (Industry Canada, 2010). CSR has become a significant driver of firms' activities due to factors ranging from external stakeholders' pressure to moral and ethical obligations (Aguilera et al. 2007). CSR helps organizations position

themselves to proactively manage risks and seize opportunities, especially with respect to their corporate reputation and a broad range of stakeholders such as shareholders, employees, customers, communities, suppliers, governments, non-governmental organizations, international organizations and other organizations affected by a firm's activities. The key parts of the modern definition are voluntary basis, stakeholders, society, environment, and corporate governance (Dahlsrud and Dahlsrud, 2008). From the economics perspective, CSR is an effort of firms to internalize the welfare of different stakeholders (Tirole, 2001). Managers should consider how their decisions affect society, i.e., stakeholders such as employees, suppliers, and customers, as well as the community as a whole. CSR is defined as a voluntary practice of integrating social, environmental, and corporate governance concerns into daily operations and engagement with stakeholders with respect to stakeholders' expectations which may be proactive or reactive and may focus on internal or external factors (Aguinis and Glavas 2007; Lee, Palmon and Yezegel 2018). Although the definitions of CSR vary, many studies suggest that it generally refers to serving people, communities, and the environment in ways that go above and beyond what is legally required of a firm (McWilliams and Siegel 2001; Margolis and Walsh 2003; Orlitzky et al. 2003; Ioannou and Serafeim 2014). The World Business Council for Sustainable Development (WBCSD) describes CSR as the business contribution to sustainable economic development. The broad definition proposed by the WBCSD (2004) argues that "CSR is the commitment of a business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life". Overall, CSR is an extension of a firm's efforts to foster sustainability via sound business practices.

There are multiple studies that indicate the benefits of positive CSR performance of a firm. Dhaliwal et al. (2011) show that firms with superior CSR performance can enhance their reputation

and brand value. Lev, Petrovits and Radhakrishnan (2010) indicate that firms who want to improve the welfare of their employees via CSR programs, with better reputation, can attract better talented workers and motivate employees to improve productivity (Waddock and Graves, 1997; Roberts and Dowling, 2002; Dhaliwal et al., 2011). Banker and Mashruwala (2007) provide evidence that increased employee satisfaction leads to better future financial performance. Previous research has also shown that firms gain more benefits in the capital market if they have good CSR performance. For example, Dhaliwal et al. (2011) document that firms who disclose more CSR information exhibit a lower cost of capital.

However, analyzing CSR involves meeting the needs of all stakeholders and not just shareholders against some ethical issues. Hence, the impact of a firm's CSR actions or initiatives can be analyzed more precisely by dividing them into three broad categories, environmental-related, social-related and governance-related categories. Scholars also use ESG terms in their research. Indeed, the definition from WBCSD includes the elements that are generally included in empirical research on CSR, such as the community, human rights, environment and the treatment of employees. The starting point for the WBCSD's work is based on the basic belief that a comprehensible CSR strategy based on sound ethics and core values, provide economic benefits (Cormier and Magnan 2014b?). The origin of the ESG concepts is grounded in the field of socially responsible investment (SRI). SRI strategies are taking into account economic aspects, environmental and social issues, as well as governance issues.

In prior empirical work, the CSR practices mainly cover two pillars of the ESG concept: environmental and social issues. The environmental dimension of CSR has been quite visible. Environment-related CSR reflects how a firm, through its actions or initiatives, is becoming "green" i.e., minimizes its environmental impact (e.g., Feier and Haskell, 2008). Prior research suggests

that adopting a greening strategy provides positive value implications (see, among others, Ambec and Lanoie, 2008). Social-related facets of CSR emerges from relationships between an organization and its employees, business partners and other stakeholders (Burt, 1992). Improvements in the social dimensions of CSR build trust in maintaining relationships with external stakeholders, thus enabling the firm to lower transaction costs (Hill, 1990). While some of these elements relate to social and environmental dimensions, others focus on stakeholders (e.g., treatment of labor). As such, this definition is consistent with Griffin and Mahon's (1997) multidimensional notion of CSR and Dahlsrud and Dahlsrud (2008), who analyzes various definitions of CSR and finds that stakeholders and the social dimensions get the same attention in Google searches. The inclusion of stakeholders within the concern of CSR is, however, controversial, as the boundary between stakeholder management and CSR is not clear cut. For example, Jensen (2001) argues that any firm potentially benefits from its engagement with the firm's stakeholder. This definition of stakeholder is similar to Freeman's (1984) definition of a stakeholder as "any group or individual who can affect or is affected by the achievement of an organization's purpose", although Freeman (1984) explicitly considers groups and individuals that can be negatively affected by the firm's behaviors. The core argument is that stakeholders play a central role in firm's operations and value creation (e.g., Donaldson and Preston 1995; Jones 1995). According to this view, all CSR activities fall under the remit of stakeholder management.

ESG aspects are also called the three pillars of sustainability (Staub-Bisnang, 2012). The Brundtland report published by the World Commission on Environment and Development (1987) is one of the first definitions of sustainability (Barkemeyer et al., 2014). It outlines three dimensions of sustainability: environmental, social and economic. Economic growth, environmental balance and social progress are three fundamental pillars of sustainable

development, as indicated by Derby (2013). To fulfill these pillars, corporate values and ethics are the key. A popular clarification of sustainable development consists of the 'three circles' model of economic, social and environmental considerations, often referred to as the three pillars of sustainability and, within the corporate agenda, the 'triple bottom line' – People, Planet, Profit (Elkington, 1994, 1997). Whereas the notion of 'Planet' refers to a company's environmental responsibility, the term 'People' denotes a company's social responsibility towards their employees and the community it is operating in. The third element, 'Profit', represents the economic value and benefits a company is creating (Elkington, 1997). The philosophical origins of sustainability lie within the 'environmental management' paradigm (O'Riordan, 1976), while economic 'growth' can occur along with improvements in social conditions and protection and effective utilization of our environmental resources. The 'three circles' model has also been influential among public policy makers, for example, the UK Sustainable Development Commission Report Prosperity without Growth (Jackson, 2009) considers the connections and conflicts between sustainability, growth.

Extensive CSR findings are consistent with extensive empirical evidence of a positive association between financial performance and corporate ethics (e.g., Margolis et al. 2009; Orlitzky et al. 2003; Van Beurden and Gossling 2008; Verschoor 1999). In both definitions, one can see that the notion of corporate governance is neglected. However, recent studies claim that good governance and sustainability cannot be treated separately, and that corporate governance should be included in the concept of sustainability (Galbreath, 2013; Saltaji 2013).

Corporate governance is defined as the *"rules and practices by which companies are governed or run"* (Encyclopædia Britannica, 2014). The roots of corporate governance lie in different theories. One of the underlying theories is the agency theory. Jensen and Meckling (1976,

p.308) define *"an agency relationship as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent."* If both parties of the contract aim to maximize their own interests, the assumption is that decisions made by the agent are not always in the best interest of the principal. Thus, in order to make agents act in the interests of the shareholders (principals), the latter has to provide the right incentives and/or bear costs to monitor the agent, the so-called agency costs (Jensen & Meckling, 1976). Jo and Harjoto (2011) suggest, CSR choice is positively associated with governance characteristics since well-designed corporate governance systems would align managers' incentives with those of stakeholders and ensure firms' sustainability via sound business practices that promote accountability and profitability. Effective corporate governance could also play the role of assessing the quality of CSR reporting and good governance leads to better disclosure quality (Cormier and Magnan 2014). Many studies have documented that corporate governance is positively associated with CSR activities (Graves and Waddock, 1994; Bear, Rahman, and Post, 2010; Li and Zhang, 2010; Oh, Chang, and Martynov, 2011; Jo and Harjoto, 2012). This indicates that better corporate governance improves CSR performance. Prior studies also document a positive association between corporate governance and financial disclosure quality in different forms (e.g., Ajinkya, Bhojraj and Sengupta, 2005). Gao, Dong, Ni and Fu (2016) show that firms with stronger corporate governance tend to provide higher quality CSR disclosures, consistent with Haniffa and Cooke (2005).

In many sectors, analysis of the 'S' or the 'G' of ESG can also reveal important investment insights. For instance, while the transport sector has major environmental challenges in the long term, the way a company deals with occupational health and safety (OH&S) and union relations can have a direct earnings impact in the short term. Another very important aspect of ESG analysis

is the way a company deals with its ESG issues can also tell investors something about the quality of management, its ethics, its values and its governance. In other words, the term 'corporate governance' refers to more than just board and remuneration structures. Likewise, besides environmental and social aspects, institutional investors are more and more taking corporate governance criteria into consideration in their SRI analysis (US SIF Foundation, 2012). In the 21st century, corporate governance focuses on new issues such as ethics, accountability, transparency and disclosure. Moreover, CSR uses corporate governance as a tool to integrate environmental and social issues in business strategy and decision making, not only to benefit shareholders, but also to benefit other stakeholders (Gill, 2008). Money and Schepers (2007) show that directors believe in a connection between business responsibility and performance and they think that it is impossible to achieve shareholder value without simultaneously creating stakeholder value. "Both CSR and CG corporate governance are concepts that allow organizations to operate profitably yet in a socially and environmentally responsible manner to achieve business sustainability and stakeholder satisfaction" (Rosam & Peddle, 2004, p.3). In addition, the convergence of the two approaches serves as a driver for long-term performance and provides an efficient tool for risk management and to improve reputation by avoiding corporate scandals or other negative events occurrence (Money & Schepers, 2007).

ESG issues are created to capture additional dimensions of corporate performance, which are not reflected in accounting information (Bassen & Kovacs, 2008). Thus, this type of information is getting gradually more included into corporate communication (Arvidsson, 2010; Ihlen, 2008). Thus, the ESG indicators capture a wider range of companies' behaviors and actions associated with social responsibilities. They are not only considering environmental and social performance that is part of classical CSR, but also the third pillar of corporate governance. Both

concepts, CSR and corporate governance, are concerned with how companies run their business and how they want to impact the business environment they are operating in. Hence, both can be seen as a strategic management tool. Yet, the two concepts cover different topics, but they can be merged together as they offer a complementary view on issues surrounding business activities (Rosam & Peddle, 2004). This convergence is mainly influenced by the increased regulatory pressure, the demand for ethics in business operations after the negative incidence of several corporate scandals and through the demand by SRI investors (Money & Schepers, 2007).

"The concept of ESG issues refers to extra financial material information about the challenges and performance of a company on these matters. It thus delivers additional relevant information, allowing more differentiated investment judgements by enabling investors to better assess risks and opportunities" (Bassen & Kovacs, 2008, p.184). Not only have ESG indicators become key indicators for the nonfinancial firm performance, but they are also commonly used to assess competencies of a company's management as well as to support risk management (Galbreath, 2013). ESG issues can uncover a crisis leading to fundamental changes in a company's management structure, style, culture, and financial health. A growing type of risks, ESG risks can bring material impact on companies' financial conditions, thereby becoming an increasingly critical concern in today's volatile environment (Harpo Ho, 2016).

2.1.2 ESG Disclosures and Firm Value

Empirical studies that examine the relationship between ESG disclosures and firm value provide mixed results and have largely focused on environmental disclosures. Early literature focus on specific environmental, social and ethical events to investigate the relationship between ESG information disclosure and firm value. For example, Blacconiere and Patten (1994) provide

evidence that investors react less negatively to firms with more environmental information disclosed than those with less information disclosed when an industrial disaster happened in the chemical industry. Freedman and Jaggi (1998) explore the association between the extent of pollution disclosures and current economic performance of firms in four polluting industries and find no association for their total sample. More recently, De Villiers and Van Staden (2011) find that economic performance is negatively associated with environmental disclosures in the annual report. Clarkson et al. (2013) document that voluntary environmental disclosures in the five most polluting US industries are incrementally informative relative to toxic emissions data and that investors seem to use emissions data to assess firms' risks. Similarly, using US firms, Plumlee et al. (2015) provide evidence consistent with a relationship between voluntary environmental disclosure quality and a firm's cost of equity capital and expected future cash flows.

More recent studies have paid more attention to general cases of ESG disclosures. Specifically, focusing on a sample of Canadian companies, Richardson and Welker (2001) find an unexpected negative association between ESG disclosures and market value. In contrast, Cormier and Magnan (2007) and Aerts, Cormier, and Magnan (2008) documents a positive relationship. With a sample of EU (Belgian, French, German, and Dutch) and North American (Canadian and US) companies Aerts et al. (2008) document that enhanced ESG disclosures increased firm value by reducing information risk. Cormier and Magnan (2007), using a sample period from 1992 to 1998 for Canadian, German, and French companies, provide evidence of a positive relationship in the results across some but not all countries. Dhaliwal et al. (2011) look beyond environmental disclosures by focusing on stand-alone CSR reports using a binary indicator to capture the presence or non-presence of a stand-alone report. They find that firms with a high cost of capital tend to

initiate a stand-alone CSR report and that subsequently, they experience a reduction in the cost of equity capital under certain conditions.

There are two main streams of ESG research in terms of their key findings in the relationship between ESG performance and firm value. One set of studies has concluded that the relationship is positive and suggests that the managerial skills of companies with good ESG performance are transferable to good corporate market activities and obtaining competitive advantages in the market (Frooman, 1997; Schuler & Cording, 2006). Thus, the stakeholders (e.g., investors, consumers, and employees) will reward management of such CSR practices through contributing resources and efforts in investment, consumption, and productivity (Renneboog, Horst and Zhang 2008a). Similarly, studies based on stakeholder theory suggest that mutual trust and cooperation with stakeholders reduce implicit and explicit negotiating and contracting costs, monitoring management, and reducing managers' incentives to behave opportunistically and pushing them to adopt a long-term orientation (Choi & Wang, 2009; Eccles et al., 2014; Jones, 1995). These studies also suggest a positive relationship between ESG performance and firm value. Empirical evidence consistent with this view has been observed in various studies (e.g., Klassen and McLaughlin, 1996; Dowell, Hart and Yeung, 2000; Konar and Cohen, 2001; Hong and Kacperczyk, 2009).

In contrast, two strands of empirical studies have found a negative relationship between corporate ESG practices and financial performance. One strand suggests that managers who engage in ESG activities neglect the opportunity cost of ESG actions and, consequently, sacrifice activities that would be more profitable for the firm (Schuler & Cording, 2006). CSR activities such as environmental protection unavoidably affect a firm's operations such as reforming costs and production costs (Heinkel, Kraus and Zechner, 2001; Deng, Kang and Low, 2013). Over time,

such ESG activities result in poor financial performance and lower firm value. The other strand is based on agency cost theory with the assumption that managers are opportunistic in nature, pursuing their own interests in the absence of discipling mechanisms (Lee 2017). The agency theory arguments in ESG research state that managers will engage in ESG activities for their own personal interests because monitoring such behavior with opportunistic motives is not easy for shareholders (Schuler & Cording, 2006). Consistent with this view, prior studies argue that managers engage in ESG activities to conceal the impact of their misbehaviors by portraying a ‘‘socially good’’ image on the firm (Hemingway and Maclagan 2004) to the public or to insure a firm against a potential loss of reputation in the case of adverse events, such as product recalls (Minor and Morgan 2012). This line of research implies that managers who direct resources towards ESG practices engage in strategic impression management for CSR and fail to place those resources to their highest productive use and, eventually, fail to maximize the firm's financial performance (Lee 2017). These studies suggest that CSR activities are not in the best interests of shareholders. Empirical studies that are consistent with this view includes Wright and Ferris (1997), Pagano and Volpin (2005), Surroca and Tribo (2008), and Cronqvist, Heyman, Nilsson, Svaleryd, and Vlachos (2009).

2.1.3 Media coverage of ESG Issues or Corporate Social Irresponsibility (CSI)

ESG issues are generally analyzed by evaluating several related key indicators or metrics. In my dissertation, I focus on media coverage of negative ESG practices or corporate social irresponsibility (CSI). CSI is defined as the “set of corporate actions that negatively affects an identifiable social stakeholder’s legitimate claims” (Strike et al., 2006, p. 852). My dissertation focuses on third party observations on firms’ actions on ESG practices and judgement on whether

a firm's action is irresponsible and unethical (i.e., CSI) and whether stakeholders blame the firm for irresponsible actions. Consistent with the definition of Kolbel et al. (2017), CSI is a construct that is attributed to a firm by its external observers (Greve, Palmer, and Pozner 2010; Lange and Washburn 2012) and the observers mainly are the stakeholders whose claims and interests are affected. Stakeholders have a strong incentive to highlight negative ESG practices and issues or CSI events that threaten their interests (Barnett, 2014; Baron & Diermeier, 2007). On the other hand, firms have an incentive to communicate positive CSR activities (Lyon & Maxwell, 2011) and usually disclose them strategically because firms realize the importance to maintain good relationships with stakeholders as this creates financial value (e.g., Grewal, Chandrashekaran, & Citrin, 2010). Media prefers to favor CSI events or negative CSR performance over positive CSR information as human mind considers negative information as more interesting than positive information (Rozin & Royzman, 2001; Kolbel et al. 2017). In order to satisfy this fundamental human preference, the media has a strong negativity bias (Niven, 2001; Soroka, 2008), and firms attempt to reveal positive CSR information through the media (Illia, Zyglidopoulos, Romenti, Rodríguez-Cánovas, & Brena, 2013). Basically, both CSI and CSR information are disseminated in the public. While CSR information is usually self-disclosed in a firm's annual report, negative CSR information or CSI is usually disseminated by the media. CSI in my dissertation is based on a third-party evaluation on negative firms' ESG issues, while CSR information comes from corporate voluntary disclosures which are usually distributed in CSR reports and corporate websites.

Some event studies focus on corporate social events which are stakeholder-related. Recent studies have examined stakeholders' and investors' reactions to stakeholder-related corporate social events. Groening and Kanuri (2013) define a corporate social event (CSE) as an event that

either complements or cancels something that is stakeholder-positive (positive CSE) or stakeholder-negative (negative CSE). The difference between positive CSEs and negative CSEs is outlined both by current legal requirements and prevailing societal standards (Groening and Kanuri,2013). For example, with the aim to build support to stakeholders, firms may direct resources to the community through corporate philanthropy (Porter & Kramer, 2002), or promote education and job creation (Boehm, 2002). Firms may address the employee stakeholder group by encouraging diversity in the workplace (e.g., Weigand, 2007). A positive CSE can extend to human rights issues (e.g., Waddock, 2008) and can be customer oriented (e.g., Brown & Dacin, 1997). Negative CSEs encompasses events such as environmental pollution, or product failures (Frooman, 1997), human rights violations, workplace injuries, resources waste problems or fraud. A positive CSE signals corporate effort to maintain and improve stakeholder relationship as firms maximize its positive impact and minimize its negative impact in society (Pride & Ferell, 1995 p. 72). In contrast, a negative corporate social event signals problem with stakeholders and firms do not want to announce a negative social event (Groening and Kanuri (2013). Any CSI news may serve as an observable action to unobservable features of the firm (Spence 1973) and the media has stronger incentives to favor CSI events over CSR events (Rozin & Royzman, 2001; Kolbel et al. 2017). Corporate social events (CSE) covered by media signals to investors that the firm takes into account its stakeholders' interests, enhancing the firm's social standing (Groening and Kanuri 2018). For instance, positive CSE news may signal the quality of its work environment (Turban and Greening 1997) and a signal of management practices (Su et al. 2014). CSE news can affect the production of moral capital with external stakeholders or affect relationships with internal stakeholders depending on the quantity of CSR activities and type of information disseminated by the announcements (Godfrey 2005; Godfrey et al. 2009). However, negative CSE news signals

that the firm may have weakened its stakeholder relationships and thus may lead to a firm's social standing negatively and decrease in its future cash flows (Groening and Kanuri 2018). The majority of prior literature refers to corporate social responsibility (CSR) as an addition or presence of a stakeholder-positive event and corporate social irresponsibility (CSI) as an addition or presence of a stakeholder-negative event (e.g., Davidson & Worrell, 1988; Muller & Kräussl, 2011). However, I base my theory development on negative ESG information or CSI coverage in the media.

There are several reasons that I choose media coverage of ESG issues to examine my research questions. First, as an important channel of spreading information, the media revealing stakeholders' criticism about firms' ESG practices represents a wider public than firms' CSR disclosures. Since stakeholders have limited attentive capability due to their cognitive limits and are not able to constantly monitor and evaluate firms (Barnett 2014), the media enables the attention to CSI or negative CSR information, increasing the potential for stakeholder sanctions (Kolbel et al. 2017). Kolbel et al. (2017) argue that CSI that receive media coverage have more chances to be noticed by stakeholders than CSI that does not receive media coverage. Second, investors search reliable information about CSR performance via public and/or private channels and they actively use the information in their investment decisions (e.g., CICA 2010; Cohen et al. 2011; Cruise 2011). For example, Cohen et al. (2011) show that retail investors prefer to use third-party sources of information about CSR, which may be due to concerns about the reliability of disclosures. Media is an important third-party-provided source of information, which is known to the public including investors. Media coverage affects a firm's information environment (e.g., Tetlock et al., 2008; Fang and Peress, 2009; Engelberg and Parsons, 2011; Griffin et al., 2011; Dougal et al., 2012; Kim et al., 2014a) and reputation building process (Fombrun and Shanley

(1990; Cahan et al. 2015). Negative ESG issues disseminated by the media to the public shall affect different capital market participants' perceptions about the reputation images and information environment of firms. Prospect theory suggests that investors are more sensitive to losses than gains (Kahneman & Tversky, 1979). This theory is also applicable to positive and negative information. Therefore, media coverage of CSI may affect investors' perceptions about a firm's future performance as investors react more to negative than positive information in the market (Broadbent, 1971; Eysenck, 1976; Wegner & Vallacher, 1986; Brown & Harlow, 1988; Taylor (1991). Third, RepRisk quantifies media coverage of ESG issues and contains coverage in different media outlets that are classified into low reach such as local newspapers, medium reach such as print media of a national or regional importance, and high reach such as the Financial Times, the Wall Street Journal, and the BBC (Kolbel et al. 2017). Burke et al. (2019) use RepRisk data to explore auditor response to media coverage of ESG issues and conduct validation tests to illustrate its robustness. They conclude that this data is valuable in accounting research (Burke et al. 2019).

I also use media coverage of ESG information measured by RepRisk AG. ESG information in Reprisk database is collected through external parties and is typically distributed by media (Kölbel,Busch and Jancso 2017). Previous studies on negative ESG information (Chava, 2014; Goss & Roberts, 2011; Oikonomou and Pavelin, 2014) have used KLD ratings. While these ratings include media information, they do not indicate when, and where the underlying information was reported. In addition, it is not transparent how media coverage is translated in KLD's proprietary rating process (Chatterji, Levine, & Toffel, 2009). It has also been argued that KLD ratings do not always reflect important media coverage of ESG information (Entine, 2003). However, my focus is on what the media precisely reveals about negative ESG issues observed by stakeholders and RepRisk database is a valuable source. RepRisk database is based on the notion that stakeholders

have a strong incentive to highlight negative ESG practices and issues that threaten their interests (Barnett, 2014; Baron & Diermeier, 2007).

As a leading business intelligence provider, RepRisk uses a proprietary algorithm to calculate the index based on the identified issues, the severity of the issues, the reach of media sources, and the frequency and timing of information. The company makes daily assessments of the risks, criticism and allegations related to issues such as environmental pollution, human rights, labor relations and corruption that negatively affect firms' reputation, profitability, or credit worthiness within firms. This RepRisk's core concentration contains 28 environmental, social and governance issues such as health and safety issues, labor issues, local pollution, company complicity, fraud and corruption. The issues are collected using artificial intelligence and issues data is collected through third parties in fifteen languages, such as media, NGOs, newsletters, news sites, governmental agencies, blogs and social media (Burke et al. 2019). RepRisk screens these social media, media and stakeholder information for any risks associated with ESG issues.

2.1.4 Analysts and ESG Information

Jensen and Meckling (1976, p. 353) theorize that "security analysis activities reduce the agency costs associated with the separation of ownership and control." Jensen and Meckling (1976) claim that stock analysis by financial analysts can increase firm value because it reduces agency costs between management and outside capital providers by facilitating monitoring of firms' activities (hereafter, the monitoring effect of analysts). Prior research finds that sell-side analysts are important information intermediaries to provide market participants information that is useful in valuing securities (Harris, Lang, & Moller, 1994; Lang et al., 2004; Schipper, 1991). Lang and Lundholm (1996) suggests that analysts play an intermediary role between a firm and

the market, receiving information selectively disclosed by the firms and interpreting information and relaying the information to the market. Lang and Lundholm (1996) also suggests that analysts serve as information providers, competing with the firm to disseminate information value-relevant to the market. The key difference in these roles is how firms communicates information. Lang and Lundholm (1996) argue that improved firms' disclosures increase the value of analysts when firms selectively disclose information but reduces the value of analysts when firms disclose information to everyone in the market.

Subsequent studies have demonstrated that financial analysts serve as a monitoring/governance mechanism. The monitoring effect does not arise from direct monitoring activities; rather it arises from private information production of stock analysts that could uncover managers' misuse of firm resources (Healy & Palepu, 2001; Lang, Lins, & Miller, 2004). Some studies suggest that financial analysts help decrease information asymmetry between investors and managers, pressure managers for better performance and constrain their value-destroying behaviors (see, e.g., Brennan and Subrahmanyam (1995); Hong et al. (2000); Ellul and Panayides (2009), and Cheng et al. (2007)). Some studies show that analysts also encourage more transparent financial reporting (e.g., Yu (2008) and Irani and Oesch (2013)). Chung and Jo (1996) and Lang et al. (2004) claim that the increased transparency from more analyst coverage makes it more difficult for managers to engage in perquisite consumption, asset transfers, or fraud (e.g., Dyck, Morse, & Zingales, 2010). Knyazeva (2008) finds that the information produced by analysts provides a substitute corporate governance mechanism. Jung, Sun, and Yang (2012) suggests that analysts facilitate more effective monitoring of firms' activities and, thereby, reduce agency costs and increase shareholder value. Indeed, analysts play an important role as information intermediaries (Guan, Lu, & Wong, 2012). Chen et al. (2015)

provide broader evidence of analysts' role as a governance mechanism and show that a decline in analyst coverage intensifies agency problems and leads to a decrease in the value of cash, an increase in excess CEO compensation, more value-destroying acquisitions, and higher level of earnings management. By analyzing a firm's performance and disclosing their negative opinions, analysts could lead the board of directors to probe into managers' activities.

Analysts are generally considered to be sophisticated users of financial information who have superior ability in providing high-quality information (Chava, Kumar, & Warga 2010). There is plenty of evidence that the information provided by analysts through their earnings forecasts, recommendations, and reports is used by market participants and that such output influences stock prices (e.g., Abarbanell & Lehavy, 2003; Asquith, Mikhail, & Au, 2005; Athanasakou, Strong, & Walker, 2009; Beaver et al., 2008; Brav & Lehavy, 2003; Dontoh, Ronen, & Sarath, 2003; Francis & Soffer, 1997; Lys & Sohn, 1990; Stickel, 1995). Market participants use analysts' forecasts because analysts process and transform the information set in financial statements along with additional information about the industry, firm strategy, and economy into future earnings predictions (Wieland, 2011). The information provided by analysts' forecasts plays a key role in mitigating information asymmetry between firms and market participants and information output by analysts plays a monitoring role to discipline managers (Mansi et al. 2011).

Extensive disclosure helps financial analysts generate valuable new information, such as more precise forecasts and buy/sell recommendations, resulting in increasing demand on their services (Healy and Palepu, 2001). What's more, prior studies have proven that the accuracy of the forecast improves if additional financial information is disclosed (Lang and Lundholm 1996; Core 2001; Hope 2003; Tong 2007; Lawrence 2013). Lang and Lundholm (1996) provide

evidence that firms with more informative disclosures have a larger analyst following, more accurate analyst earnings forecasts and less dispersion in analyst forecasts.

Analysts have increasingly probed a wide variety of nonfinancial factors to better understand their potential impact on the valuation of a firm. Some recent studies on the relation between information disclosures and analysts have captured the attention of ESG information. For example, security analysts and the interactive role of analyst coverage and CSR are receiving increasing attention in CSR research. Previous studies show that analysts are found to be attracted to firms that actively engage in CSR activities, which provide additional information that can improve the reputation of a firm (Shane and Spicer 1983; Ioannou and Serafeim 2014; Luo et al. 2014). Hong and Kacperczyk (2009) show that although sin stocks are involved in producing tobacco, gaming and alcohol, they have a higher stock return but are less attractive for analysts because of the social norms. It has also been shown that the issuance of separate CSR reports increases earnings forecast accuracy (Dhaliwal et al. 2012). Many market participants are unable to process and trade on the information of nonfinancial disclosures as they have difficulties identifying and assessing the value implications of the information in nonfinancial disclosures (Nichols and Wieland 2009). Another view is that CSR activities may be the manifestation of agency problems and managerial preference for personal and social reputation at the costs of shareholders, reflecting conflicts of interests between shareholders and managers (Baron, 2008; Masulis and Reza, 2015). This type of agency problem may be particularly severe as it is very difficult to quantify and measure the tangible or intangible financial and social benefits of its CSR activities that accrue to companies (Kruger 2015). In recent studies (e.g., Brown et al., 2014), financial analysts spend real resources and efforts on a wide range of activities such as visiting companies and facilities and /or interviewing consumers and suppliers

to collect information beyond the mandatory disclosures (Brown et al., 2014). As a consequence, analysts play a very important disciplinary role in mitigating managerial expropriation of outside shareholders (Chen et al., 2015). As a result, nonfinancial information allows analysts to play as an intermediary role between firms who disclosure the nonfinancial information and the market. Therefore, theoretically, analysts earning forecast ability should increase with the amount of both financial and nonfinancial information (Zhou et al. 2017).

Empirical studies provide supportive evidence that analysts use non-financial information (i.e., CSR information) in their earnings forecasting tasks (Nichols and Wieland 2009; Orens and Lybaert 2007; Simpson 2010) and use both financial and nonfinancial information interactively (Coram, Mock, and Monroe 2011; García-Meca and Martinez 2007; Ghosh and Wu 2012; Maines, Bartov, Fairfield, and Hirst 2002; Orens and Lybaert 2010; Simpson 2010; Pflugrath, Roebuck, and Simnett 2011). Dhaliwal et al. (2011, 2012) find that firms with higher CSR ratings attract dedicated analyst coverage and analysts have lower earnings forecast errors and lower earnings forecast dispersion for firms with good CSR disclosure. Cormier and Magnan (2014) find that both CSR disclosures and corporate governance increase consensus among analysts and reduces forecast dispersion and that corporate governance substitutes for environmental and social disclosures improving analyst forecast precision. Prior literature studies also argue that CSR practices are value relevant and that firms with less social responsibility are characterized by less reputation, high risk, high information asymmetry, and non-transparent disclosures (Bhandari and Kohlbeck, 2016). Bhandari and Kohlbeck (2016) document that analyst following, and consensus analyst forecast accuracy are related to the amount of CSR activities disclosed. There are also recent studies that examine the association between CSR performance and analysts' stock recommendations (e.g., Ioannou and Serafeim

2014; Luo et al. 2014). Ioannou and Serafeim (2015) provide evidence that in the early 1990s, analysts issue more pessimistic recommendations for firms with high CSR ratings. In other words, firms with better CSR performance were the subject of more pessimistic stock recommendations from analysts. They argue that during early period, analysts perceived CSR activities as self-serving mechanisms implemented by managers. However, as the business concern for CSR and its institutionalization gradually advance, this pessimism decreases, and analysts now consider CSR activities as both serving stakeholders' interests and enhancing profitability (Ioannou and Serafeim 2015). Ioannou and Serafeim (2015) then find that during the post-2003 period, analysts issued more optimistic stock recommendations for firms with better CSR performance as in more recent years, analysts gradually assess these firms less pessimistically, and eventually they evaluate them optimistically. Their study suggests that CSR ratings are known to influence assessments of future financial performance. In both cases, analysts can make better and apparently more reliable assumptions regarding a firm's future cash flows and earnings due to additional disclosed information such as CSR information.

Luo et al. (2014) are motivated by the on-going debates and controversial arguments about the relation between corporate social performance and financial performance (e.g., Barnett and Salomon, 2006; Margolis and Walsh, 2003; Orlitzky, Schmidt and Rynes, 2003; Ramchander, Schwebach and Staking, 2012). Luo et al. (2014) argue that analyst recommendations mediate the relationship between corporate social performance and firm stock returns. They provide evidence that financial performance effect of corporate social performance can be better realized when security analysts incorporate firm social performance information, suggesting that these analysts are more likely to be catalysts that help materialize the relationship between shareholder investment returns and firm socially responsible activities targeting broader

stakeholder groups. They argue that despite the availability of third-party professional ratings on firm ESG dimensions (e.g., KLD, Thomson Reuter's ASSET4), such information is too complicated to be directly understood and priced by general investors who are not certified industry experts and are often constrained by time and resources (Fombrun, Gardberg and Barnett, 2000; Surroca, Tribo and Waddock, 2010). Therefore, not all corporate social performance information can be automatically incorporated into firm stock performance and thus reflected into stock prices efficiently (Godfrey, Merrill and Hansen, 2009). The findings of Luo et al. (2014) confirm that analysts play a crucial information-bridging role, through which shareholder and stakeholder views can be better aligned as more shareholders act as universal investors in the markets (Stout 2012).

However, many of these empirical studies focusing on analysts and use of CSR information have integrated CSR and CSI into a single construct by combining "strength" and "weakness" scores of the Kinder, Lydenberg, and Domini (KLD) dataset into a unitary CSR score. The information environment of CSR has two sides: firms may engage in positive CSR activities, which generate positive measures of CSR but also may engage in socially irresponsible behaviors through actions that are negative with respect to CSR (Lange and Washburn 2012; Mishra and Modi 2013). CSR strengths and CSR concerns or CSI represent distinct attributes of CSR as a construct (Mattingly and Berman 2006). Both positive CSR measures and CSI measures (CSR strength and CSR concerns) could affect market reactions, credit ratings and firm value (e.g., Janney and Gove 2011; Attig et al. 2013), providing similarly valuable information in improving the information environment through benefit of reducing search costs in analyzing firms. However, such a summary measure that combine both CSR and CSI information may mix the initial driver of potential for stakeholder sanctions caused by CSI

with its subsequent mitigation measure. Hsu et al. (2018) suggests that separating the two constructs reveal a striking result. Hsu et al. (2018) examine whether stakeholders, in particular equity investors and financial analysts, incorporate CSR performance in their assessment of earnings-related corporate disclosures. They find that both positive and adverse CSR performance affect analysts' earnings forecast revisions in response to announcements of earnings and management earnings forecasts. They show that firms with adverse CSR performance exhibit lower disclosure quality and earnings persistence, however, they do not find evidence that firms with positive CSR performance exhibit higher levels of both measures. Although Hsu et al. (2018) isolate CSI empirically from CSR, they do not reflect what is theoretically different about CSI or explain why analysts focus more on those associated with negative ESG practices or CSI.

What's more, recent studies on the relationship between ESG information and stock market pricing have emphasized the CSI. Krüger (2015) finds that environmental and social issues result in negative abnormal stock returns on the days surrounding the event. Using the media coverage of ESG issues, Globner (2017) find that firms' negative ESG issues covered by media entail negative abnormal long-run stock returns, demonstrating that high ESG risks of firms destroy shareholder value, revealing an important channel through which CSI detrimentally affects shareholder value. Globner (2017) shows that the stock markets do not fully capitalize the negative consequences of intangible risks as investors underestimate the damage of past ESG issues. Globner (2017) also shows that firms with high ESG risks have more ESG issues in the next year than firms with low or medium ESG risks and investors are surprised when firms with high ESG risks have new ESG issues, as indicated by negative abnormal event returns. They

argue that investors underestimate the likelihood that firms with high ESG risks have new costly ESG issues.

The supply of ESG information from CSR reporting (i.e., firms' CSR disclosures and third-party issued CSR information) affect the value of the information disclosed and the extent to which investors demand advice form analysts (e.g., Lee et al. 2018). Since ESG information allows analysts to play as an important information-bridging role between firms who provide ESG disclosures and the capital market, whether analysts are aware of the risk and damage of media coverage of ESG issues and react to its consequences and thus help investors assess the effect of these media coverage better is an open empirical question. In this dissertation, I focus explicitly on CSI information, and explore the mechanism by which it affects analysts' forecasting tasks. I use media coverage of CSI measured by RepRisk AG.

2.1.5 Analysts' Perceptions about ESG information

Anecdotal evidence suggests that financial analysts do not regard CSR as a value-enhancing activity. A study by United Nations Environment Program (UNEP, 2004), which conducts in-depth interviews with analysts from many countries, concludes, "Young analysts appear unconvinced over the materiality of most environmental, social, and governance issues to business." Another study by Ernst and Young (1997) finds that environmental and social policies are one of the least valued (ranked 37 out of 39) non-financial factors by analysts when making earnings forecasts.

Based on a joint survey of 388 fund managers and financial analysts initiated by CSR Europe, Deloitte, and Euronext (2003), 79% of fund managers and analysts stated that social management has a positive impact on firm value in the long term, and around 50% of them

consider firm information on social and environmental performance. Most importantly, 51% of fund managers and 37% of financial analysts respectively would grant a stock price premium to companies who are socially responsible (CSR Europe et al., 2003). Moreover, 37 percent of financial analysts indicate that they would grant a stock price premium (discount) to socially responsible (irresponsible) companies. This is consistent with the view that CSR activities enhance firms' reputation as the firms maintain their commitment with key stakeholders (e.g., employees, customers, clients) and as a result, increase the stakeholders' willingness to contribute resources and efforts to support the firms' operation, which in turn, improves shareholder wealth (Deng et al., 2013). Professional analysts such as investment banks and brokerage houses even have divisions that specifically analyze firm social performance data (e.g., Goldman Sachs, HSBC, and Credit Suisse). Such analyst emphasis on CSR is further evidenced by the increasing demand of investors for CSR (Dhaliwal et al., 2012). According to the survey, 78% of investors discuss CSR issues with sell-side analysts (ECCE, 2007) and 56% of corporations indicate that investors requested information on non-financial areas and goals including ESG metrics (BNY Mellon, 2012). Ernst & Young have reported that in 2014, environmental and social issues accounted for 56 percent of shareholder proposals, representing a majority for the first time (Ernst and Young 2014).

Indeed, an increasing number of initiatives integrates ESG factors into mainstream investment analysis (Jemel-Fornetty, Louche, and Bourghelle, 2011) because "mainstream analysts...were starting to pay more attention to the potential for ESG-related research to add investment value" (A4S, GRI and Radley Yelda, 2012; CAMRADATA, 2013; Eurosif and ACCA, 2013; PRI, 2013: 24). For example, Eccles, Serafeim and Krzus (2011: 117) counted 44 million total queries in the Bloomberg database between November 2010 and April 2011 and

conclude that while at Deutsche Bank (2012: 28) "mainstream corporate analysis considers key financial data...main criteria, but analysts actively screen companies with poor ESG ratings or involvement in controversial ESG issues."

Analysts' emphasis on CSR is also evidenced by Luo et al. (2015), who interview 28 financial analysts. Their survey evidence along with those conducted by Fieseler (2011) provide further qualitative evidence that analysts gain increasing attention to corporate ESG practices as the majority of these analysts monitor firms' social performance closely. Fieseler (2011) interviewed 42 mainstream financial analysts, and their survey shows that analysts use firms' social performance to measure management's long-term orientation and the financial health of firms. Luo et al. (2015) also reveals that analysts discuss various ESG issues regarding the environment, products, employee relations, corporate governance, community in their analyst reports. While these studies may confirm that analysts to some extent incorporate ESG information, these studies do not make clear about whether analysts' perceptions are different between positive CSR information and CSI information. This is important because positive CSR information is usually self-disclosed in a firm's annual report and CSI information is usually disseminated by media. There is no study that specifically examines how the media coverage of CSI affect analysts forecasting tasks.

In addition, several studies show that the incorporation of ESG dimensions into valuation and investment decisions practices remains marginal (BSR, 2008; Campbell & Slack, 2011; Jaworski, 2007; Guyatt, 2006a; Jemel, 2010; Mainelli, 2009). Many mainstream analysts and investors are still reluctant to change their conventional practices by incorporating ESG issues into investment analysis and decision-making processes (Jemel et al. 2011). Jemel et al. (2011) argue that one of the most important barriers is the skepticism about the link between ESG

factors and financial performance as they are unconvinced about the impact of ESG issues on stock value (BSR, 2008; Campbell & Slack, 2011; Jaworski, 2007).

According to a number of prior studies, the lack of interest of mainstream analysts and investors into ESG information and their inability to perceive the relevance of ESG factors can be due to behavioral impediments (BSR, 2008; Guyatt, 2005a, 2006a; Juravle & Lewis, 2008). One impediment considered as an important barrier to integrate ESG information is the dissatisfaction of investment professionals with the quality of ESG information. The quality of companies' disclosure on ESG issues is criticized for being not sufficiently detailed and/or not appropriate for an effective assessment of ESG issues (BSR, 2008; Jaworski, 2007; Jemel, 2010; McKinsey, 2009; Solomon & Solomon, 2006). One explanation for this lack of incorporation is that integrating ESG information are significant challenges to firms, including the difficulty of identifying and measuring ESG indicators and drivers, the cost of collecting and managing information in a timely manner (Adams et al. 2011). Another explanation is that investors become more suspicious of information such as high CSR investment level when managers have strong incentives to strategically disclose strong CSR performance (e.g., Berrone and Gomez-Mejia 2009a).

In addition, the use of accounting information such as financial reports or the use of standard financial valuation models such as discounted cash flow models to estimate the value of a company is widespread among investment agents (Barker, 1998; Previts, Bricker, Robinson, & Young, 1994). It is regarded as a conventional practice in evaluating companies' stocks. Some other activities as the collection and analysis of ESG information or the assessment of the impact of ESG factors on company's financial performance are not conventional practices amongst mainstream analysts and professional investors (Campbell & Slack, 2011; Deegan, 1997; Milne

& Chan, 1999; Jemel et al. 2011). The studies by Guyatt (2005a, 2005b, 2006a) shows that internal and external conventional investment practices could impede fund managers ability to integrate ESG information into investment decisions. These lines of research found that short-termism and movement towards defensible investment decisions establish the main behavioral impediment to the integration of ESG dimensions by institutional investors. This finding was corroborated by recent studies (BSR, 2008; Campbell & Slack, 2011; Juravle & Lewis, 2008; McKinsey, 2009). Juravle and Lewis (2008) and Campbell and Slack (2011) confirm that internal investment institutions' conventions and culture do not incentivize analysts and investors to consider ESG information (Campbell & Slack, 2011; Juravle & Lewis, 2008). According to Campbell and Slack (2011), "a sell-side analyst's frame of reference is derived from the nature of their incentives and, to some extent, their institutionally-based cultural and ethical presuppositions". Nonetheless, Davis et al. (2006) stated "analysts are usually poorly incentivized to move their analysis beyond the drivers of short-term performance" (Juravle and Lewis, 2008: 291). Thus, even if investors and analysts recognize that ESG factors can impact financial performance, they are still reluctant to use them because they estimate that their contributions are either too indirect to value creation or too long-term oriented compared to their normal investment horizon (BSR, 2008; Jaworski, 2007; McKinsey, 2009). However, analysts also have boundaries in information processing and the complexity of the task negatively affect analysts' earnings forecast error and dispersion. For example, analysts' forecasts are less accurate if they are associated with complex changes in the tax law (Plumlee 2003). Bradshaw et al. (2008) find that differences in accounting choices adversely affect forecast accuracy and increase dispersion. If information load problems exist for analysts relying on complex financial information, including additional non-financial information into their decision-making can pose

an even greater problem. Information load problems may occur to analysts when non-financial information and financial information adds significantly to the total task complexity if both information is not well-organized and well-connected (Zhou et al. 2017). Empirical studies document that analysts tend to underreact to information in non-financial measures even though those measures can significantly help predict future earnings (Rajgopal, Shevlin, and Venkatachalam 2003; Simpson 2010).

However, media coverage of CSI increases the potential for stakeholders' sanctions as CSI revealed by the media draw stakeholders' attention, which coordinates the attention of stakeholders to the agenda-setting (Tang and Tang 2016) and influences their cognitive response to CSI through framing (Lange and Washburn 2012). Furthermore, ethics and integrity are an integral element of the COSO Enterprise Risk Management framework, and ethics and risk management are correlated and have empirical support (Francis and Armstrong 2003; Godfrey 2005; Power 2004;2009). Ethics and integrity are reflected by corporations' values and actions on how they tackle with ESG issues raised by their stakeholders. The media coverage of CSI provides a critical condition for stakeholder sanctions to take place against a particular firm as the media coverage that identifies those actions as CSI is important to capture stakeholders' attention towards the irresponsible actions (Lange and Washburn 2012).

I hypothesize that analysts may be more sensitive to CSI revealed by the media than positive CSR information disclosed by firms and analysts may perceive the media coverage of CSI more impactful to a firm's financial performance and long-term valuation due to media coverage's great influence in the stakeholder community. Thus, further academic research is needed to document the causal relationship between environmental, social and governance issues revealed by media other than firms and analysts' forecasting behaviors as this will be one of the

most crucial factors driving the use and proliferation of ESG information and metrics. Therefore, in my dissertation, I explore whether and how analysts perceive severe ESG issues and how these issues impact analysts' activities.

2.1.6 Literature on Environmental and Social Aspects of ESG on Analysts

CSR is a form of corporate self-regulation that consider the environmental, social and economic dimensions of corporate activities. CSR activities improve firms' reputation for maintaining their commitment with respect to the implicit/explicit contracts with key stakeholders (e.g., employees, customers, clients) and eventually increase the stakeholders' willingness to contribute resources and efforts to support the firms' operation, and thereby enhances shareholder wealth (Deng et al., 2013). Managers should consider how their decisions affect the whole business community, i.e., stakeholders such as employees, suppliers, customers, investors as well as other market participants.

The environmental dimension of CSR or ESG issues has become quite important and more visible. Many investors are concerned about the degree of economic entities' influence on climate and as a result, environmental factor is gaining relevance in financial analysis (Eccles et al. 2014). Climate change may be the most important environmental issues for companies, however, it is not the only one within environmental dimension of CSR. Investors and analysts strive to understand how such issues as pollution, resource depletion, ecosystem change, waste disposal, the use of toxic chemicals and other environmental issues affect a company so as to understand the environmental risks and opportunities the company faces. Environmental domain consists of the quality of environmental practices including pollution reduction initiatives,

introduction of environmental management systems, and measurement for limiting carbon emissions.

Environmental facet of CSR activities and performance reflects how a firm is becoming "green" through its actions or initiatives, i.e., minimizes its ecological and environmental impact (e.g., Feier and Haskell, 2008) and thus contribute to sustainable development in society (Hart 1997). Prior research suggests that the value implications from adopting a greening strategy are positive, although these implications are explored with some context-specific conditions or aspects (e.g., Ambec and Lanoie, 2008). Analysts often regard green technology or new environmentally friendly practices such as waste water treatment as meaningful corporate contributions to long term growth. The analysis of Sal. Oppenheim initiated coverage of Petrotec with a "buy"-rating because "a rising environmental awareness is one of the initial drivers for renewable energies" (Luo et al. 2014). Many studies examine the association between environmental disclosure and environmental performance. Ingram and Frazier (1980), Jaggi and Freedman (1982), Wiseman (1982), Rockness (1985), Freedman and Wasley (1990), and Fekrat et al. (1996) do not find a significant association between environmental disclosure and environmental performance. Patten (2002a) finds a negative association between environmental performance and environmental disclosures. Recent studies provide evidence of a positive association between environmental performance and the extent of discretionary environmental disclosures (Al-Tuwaijri et al., 2004; Clarkson et al., 2008).

Social factors such as human rights, labor relations, child labor, community relations and development, and worker safety standards have become increasingly important in public eye. Social-related facet of CSR activities and performance arises from relationships between an organization and its employees, business partners and other stakeholders (Burt, 1992).

Richardson and Welker (2001) focus on social disclosure and they assume that social activities are associated with regulatory costs, consumers' tendency to obtain a firm's products, among other implicit or explicit contract costs. To Improve the social facets of ESG, trust in contracting relationships with external stakeholders should be built, which enables the firm to lower transaction costs (Hill, 1990). News about poor labor working conditions, or poor safety record potentially damages a company's reputation and in turn, adversely affects the financial prospects of the firm in the public perception by hurting revenue or getting new regulatory burdens. Investors increase their awareness of understanding the social risks that threaten corporate reputation in which they invest.

The increasing importance of CSR disclosure and performance in practical applications has been reflected in academic research (e.g., O'Dwyer, Unerman, and Hession, 2005; Plumlee, Brown, and Marshall, 2010; Nichols and Wieland, 2009; Simnett, Vanstraelen, and Chua, 2009; Johansen, 2010; Dhaliwal, Li, Tsang, and Yang, 2011, 2014; Dhaliwal et al., 2012). The extent of the information asymmetry between a firm's management and stakeholders is the fundamental concern for a firm's stakeholders. Mangers disclose information about economic, environmental and social aspects of their activities in order to meet the information need of stakeholders, especially regulators and investors. However, environmental and social disclosures have a weaker effect on the capital market due to constraints such as investors' limited attention and information processing capacity (e.g., Dong, H., Lin, C., & Zhan, X. 2017).

One important line of ESG research is those that have focused on the decision-usefulness of social and environmental disclosures have examined the usefulness of such disclosures to certain actual or potential users of business communications. There is mixed evidence on the investment materiality and decision-usefulness of environmental disclosure to investors and

analysts. A number of prior studies, such as Deegan (2004), Solomon and Solomon (2006) and Thompson and Cowton (2004) have supported the decision-usefulness and materiality of environmental information. However, findings in some other studies (Deegan & Rankin, 1997; Milne & Chan, 1999) have questioned their materiality. Following Benjamin and Stanga (1977) and Teoh and Shui (1990), Milne and Chan (1999) studied the decision-usefulness of social and environmental disclosures for investment decisions made by investment analysts and whether such disclosures have impact on the behavior of investors in their fund allocations. They provided evidence that for financially trained investor groups, social disclosures have little effect on investment decisions, consistent with the earlier studies of Benjamin and Stanga (1977) and Firth (1978). Chan and Milne (1999) focused on the news direction (good or bad news) of social and environmental disclosures and noted that, "UK City analysts are driven by the requirements of their clients, which they interpret to be primarily a positive financial outcome on the clients' investments. Issues considered moral or emotional are not seen as part of the analyst's remit". Deegan and Rankin (1997) examined annual report environmental disclosures and evaluated their decision-usefulness to several user groups, including brokers and analysts. They showed that social and especially environmental information was important to some user groups (particularly non-institutional investors) but, significantly, was of little importance to investment analysts. Consistent with Deegan and Rankin's 1997 findings, the Business in the Environment (1994) studied the low-ranking of environmental information to analysts and showed that analyst assessments are predominantly based on financial criteria. This line of the research is highlighted by the increased use of environmental reporting and scrutiny by banks (Aintablian, McGraw, & Roberts, 2007) and the demand for increasing use of environmental factors in decision-making by capital market participants. Mainelli, Stevenson, and Thamotheram (2009) commented on the

launch of the Enhanced Analytics Initiative in 2004 which is designed to encourage sell-side research to look beyond short-term financial information and to recognize the importance of social and environmental, alongside financial performance. PricewaterhouseCoopers (2009) reported a growing acknowledgement by fund managers of environmental risks in mainstream investment decision-making (see also Ernst & Young, 2003). More directly for banks, a European Sustainable Investment Forum (Eurosif) sector report (2009) on the European banking industry noted the significant environmental impact of banks' lending activities and potential reputational risk.

At the same time, Nichols and Wieland (2009) show that the information intermediary role of financial analysts is more important when firms issue product-related non-financial information, which are closely related to firms' sales and future cash flows. Fieseler (2011) highlights that equity analysts consider environmental sustainability as long-run value-enhancing activity and emphasizes on firms' environmental irresponsible actions. Campbell and Slack (2011) contributes to this line of literature and enhance the understanding of the decision-usefulness of environmental disclosures to sell-side bank analysts as a specific capital market participant. Adhikari (2014) suggest that the information role of financial analysts and resulted external monitoring tend to be an important driving force in mitigating firms' irresponsible behaviors. Dong et al. (2017) show that reduction in analyst coverage causally caused corporate socially irresponsible practices, particularly in terms of environmental issues and product safety and quality concerns. They find that when there is exogenous reduction in financial analysts, firms tend to be more irresponsible in terms of environmental issues and product safety and quality. Dong et al. (2017)'s findings confirm that environmental sustainability and product quality and safety tend to be emphasized more by equity analysts. They use key words search in

analyst reports and find "environmental" and "product quality" to appear more frequently than the other categories of corporate social responsibility dimensions and the analysts' emphasis on these categories increase over time. They show that financial analysts emphasize different dimensions in firms' ESG performance to different extents.

Prior literature also directly demonstrates that corporate social responsibility (CSR) disclosure, i.e., social and environmental disclosures may help reduce the information asymmetry between a firm's managers and its stakeholders, especially investors. There is empirical evidence that both social disclosure (Downing, 1997; Cormier et al., 2009a) and environmental disclosure (Barth and McNichols, 1994; Li and McConomy, 1999; Aerts et al., 2008) convey value-relevant information. Cormier et al. (2009a) show that social disclosure reduces a firm's cost of equity capital. With respect to environmental disclosure, Aerts et al. (2008) find that it is associated with a decrease in analysts' forecast dispersion. Additionally, Cormier and Magnan (2009a) builds on prior research that focused on the usefulness and relevance of corporate performance disclosure for market participants by investigating how corporate disclosure about its social capital and human capital affects information asymmetry between managers and investors. Cormier and Magnan (2009a) suggest that quantitative (hard) social and human capital disclosure reduces information asymmetry, as proxied by share price volatility and Tobin's Q, while indicative (soft) human capital disclosure is marginally associated with a reduction in information asymmetry. Building upon the intuition of Neu et al. (1998) who treated social disclosure as a determinant of environmental disclosure, Cormier and Magnan (2011) examines whether environmental disclosure and social disclosure have a substitute or a complementary effect in reducing information asymmetry between managers and stock market participants. Cormier and Magnan (2011) argue that information about a business

decision may lead to contrasting interpretations about their social and environmental implications and different stakeholders have differential interests and incentives in terms of information. Focusing on large Canadian firms, Cormier and Magnan (2011) suggest that social disclosure and environmental disclosure substitute each other in reducing the informational asymmetry between managers and stock market participants, as reflected in lower share price volatility and lower bid-ask spread. Moreover, within environmental disclosure, they show that the reduction in share price volatility is higher for disclosure about environmental debts, risks and litigations than for disclosure about environmental management practices. Their finding that a firm's environmental performance directly affects its CSR disclosure, with high polluting firms disclosing more than low polluting firms. This finding is inconsistent with the evidence reported by Clarkson et al. (2008) who show that poor (good) environmental performance translates into less (more) disclosure.

2.1.7 Literature on Corporate Governance Aspects of ESG on Analysts

Investors have increasingly included corporate governance risk exposures in their investment-decision-making process, their engagement and proxy-voting activities. Governance rating agencies have emerged to meet the increasing demand for information on governance-related risks in public firms and investors rely on such governance rating agencies to assess the governance risk in their own portfolios. With investors increasing awareness on governance risk exposures, regulatory focus on disclosure in governance has sharpened as has academic research on the relation between governance practices and disclosures and firm performance. Both CSR disclosures (i.e., environmental and social disclosures) and corporate governance are two complimentary mechanism used by firms to improve relations and build mutual trust with

stakeholders (Chan, Watson and Woodliff 2014). Corporate governance is considered a type of firm characteristics. Adams et al. (1998) state that the first step to enhancing the quantity and quality of CSR disclosures is to examine the firm characteristics related with CSR disclosure. Gobson and O' Donovan (2007, p.944) argue that ''good governance is now closely linked to the concept of CSR and accountability and that one way to demonstrate CSR is to increase annual report disclosures.'' The governance dimension of ESG comprises issues associated with the firm's board structure, executive compensation and anti-competitive practices. A Board of Directors of a company is obligated to understand the environmental and social implications of the company's actions and ensure that the company responds to the view of stakeholders with whom it enters into contract (Association of Chartered Certified Accountants 2005). Other studies also suggest that good corporate governance ensures the voluntary provision of CSR information and the commitment of sound CSR practices (Eng and Mak 2003; van der Laan Smith et al. 2005; Haniffa and Cooke 2005). Chan et al. (2014) provide evidence that corporate governance is positively associated with CSR activities and disclosure, suggesting that corporate governance as a way of increasing CSR disclosures. In my dissertation, I treat corporate governance as an important part of ESG.

Financial analysts perceive corporate governance issues to establish a classic inspection area within corporate valuation, whereas issues such as social or environmental impact experience incremental consideration (see ECCE 2007a: 9). This could be due to the determined higher regulatory agenda regarding corporate governance concerns in relation to environmental, social and ethical responsibilities after corporate scandal, stock market collapses and other negative public events (Money and Schepers 2007). This could also be due to the ensuing improved traceability of such issues through data compiling specifications and disclosures as opposed to the

more recently recognized influence of social and environmental aspects by investment professionals (Bassen and Kovacs 2008).

Prior research suggests that effective corporate governance itself may help reduce information asymmetry and improve analyst forecast precision (see Chan et al. 2014). Bhat et al. (2006) provide evidence that governance transparency is positively associated with analyst forecast accuracy and that governance-related disclosure is more important in improving the information environment when financial disclosures are less transparent. Ajinkya et al. (2005) and Karamanou and Vafeas (2005) indicate that management earnings forecasts are more accurate in firms with more independent boards, which can lead to a reduction in analyst forecast errors. Goh et al. (2008) show that better corporate governance, in terms of greater board independence and greater institutional monitoring, improves liquidity through more voluntary disclosure and greater analyst coverage. Cormier and Magnan (2009a) show that efficient governance leads to more transparency in quantitative human capital disclosure while the extent of CEO stock options leads to less transparency in social capital disclosure, either soft or hard. Cormier et al. (2009b) show that some formal governance attributes (board and audit committee size) reduce information asymmetry measured by either share price volatility or Tobin's Q. Their research built upon studies that looks into the impact of corporate governance on firm value and information asymmetry (e.g., Bhagat and Bolton, 2008; Hutchison and Gul, 2003). Cormier and Magnan (2011) document that a firm's governance influences the extent of its CSR disclosure and, ultimately, affects information asymmetry between a firm's managers and other stakeholders. Extending Collett and Hrasky (2005), Cormier and Magnan (2011) show that voluntary governance disclosure does influence capital markets' participants. Cormier and Magnan (2011) point out that most prior research has focused on contrasting voluntary financial, social or environmental

disclosures with formal governance attributes, thus avoiding the issue of governance disclosure itself (e.g., Sanders and Boivie, 2004). They argue that voluntary governance disclosure provides additional insights into how a firm creates value, information considered useful by investors (e.g., Bushman et al., 2004). Cormier and Magnan (2014) argue that environmental and social disclosures may affect analyst earnings forecasts directly and, indirectly, through corporate governance. In other words, the effect of disclosure on the quality of analyst forecasts should depend on corporate governance. Specifically, corporate governance substitutes for CSR disclosure in its association with analyst forecast precision. Their results also suggest there is CSR disclosure has an indirect effect on analyst forecast precision through governance and analyst following. Furthermore, they find that corporate governance has a mediating effect on the impact of environmental and social disclosures on analyst following and then on the quality of earnings forecast in the Canadian context. Their findings appear that both environmental and social disclosures and governance attract analysts and improve their ability to forecast earnings.

2.1.8 Cash Flow Forecasts

Investors and the media have paid much attention to earnings forecasts. However, accrual-based earnings are subject to some estimation errors that make analysts forecasting difficult (see Dechow and Dichev 2002). Furthermore, earnings may be more prone to management manipulation both because many accruals are based on management estimates which create an opportunity to manage earnings and because management compensation is usually tied to earnings rather than cash flows (e.g., Edmonds et al. 2011). Since earnings are more easily manipulated and more difficult to forecast, earnings forecasts are of a lower quality than cash flow forecasts (Gleason & Lee, 2003; Park & Stice, 2000). Cash flows are less

subjective than accrual-based earnings (Levitt, 2002, p. 154; Penman, 2001, p.611; Wild, Bernstein, & Subramanyam, 2001, p. 532). The demand for cash flow information and cash flow forecasts increased substantially following the accounting scandals identified in the early 2000's (Edmonds et al. 2011). These scandals eroded investor confidence in the capital markets and reflected that earnings alone do not always predict future firm performance consistently and reliably (Jain & Rezaee, 2006). In certain economic cases, firms have incentives to report their earnings favorably by using the flexibility in generally accepted accounting principles. In contrast, cash flow information is arguably perceived as being more concrete and less susceptible to artificial manipulations than "pro-forma" or actual reported earnings (Edmonds et al. 2011).

Analysts' cash flow forecasts are becoming more common. Analysts provide cash flow forecasts along with earnings forecasts because cash flow information is useful in understanding the implications of current earnings on future cash flows and in assessing the financial conditions of companies (e.g., Pae and Yoon 2012). Analysts operating cash flow forecasts help investors assess solvency and viability (Defond and Hung 2003; McInnis and Collins 2011). The quality of earnings forecasts may also depend on the cash flow forecasts. Prior research shows that analysts' forecasts of earnings are more accurate when accompanied by cash flow forecasts (Call et al. 2009; Pae et al. 2007), suggesting that analysts adopt a more structured and disciplined approach to forecasting earnings when they also issue cash flow estimates. Prior studies suggest that cash flows are incrementally useful to earnings in valuing securities (Bowen, Burgstahler, & Daley, 1987).

DeFond and Hung (2003) is the first study to document the increased propensity of analysts to issue cash flow forecasts. They hypothesize and find empirical evidence consistent with the notion that analysts have provided more cash flow forecasts in recent years in response

to demand by investors who raise concerns about the reliability of earnings which are subject to manipulation by managers. Since cash flow from operations is perceived to be more objective and less vulnerable to manipulation, it is commonly viewed as a valuable supplement to earnings information. DeFond and Hung (2003) show that analysts' propensity to generate cash flow forecasts increases with the magnitude of accruals, management latitude in choosing accounting methods, earnings volatility, capital intensity, and financial distress. DeFond and Hung (2003) provide evidence to suggest that cash flows are useful in helping investors interpret earnings and cash flow forecasts serve as an additional monitoring device for firms with poor earnings quality. In a complementary study, DeFond and Hung (2007) consider an international setting to examine analysts' propensity to issue cash flows across countries with different reporting regimes. DeFond and Hung (2007) find that analysts are more likely to provide cash flow forecasts for companies in countries with weak investor protection and earnings of lower quality than for those in countries with strong investor protection. These findings indicate that the demand for cash flow forecasts tends to be high when earnings forecasts do not provide sufficient information on future cash flow prospects. These studies indicate that firm characteristics explain why some analysts provide cash flow forecasts while others do not. Other studies have documented that individual characteristics such as analyst forecasting experience, brokering house size affect analyst decision to provide cash flow forecasts (Ertimur and Stubben 2005; Pae et al. 2007).

In line with the notion that cash flow forecasts are driven by investor demand arising from earnings quality concerns, a number of studies examine how the presence of such forecasts affects earnings quality and valuation. These studies have shown the usefulness of cash flow forecasts even in the presence of earnings forecasts, serving as an additional monitoring

mechanism for firms of poor earnings quality (Edmonds et al. 2011). For example, McInnis and Collins (2011) find that firms' accrual quality enhances after the initiation of analysts' cash flow forecasts. Specifically, McInnis and Collins (2011) find that analysts' cash flow forecasts make accrual manipulations more transparent and help constrain earnings management. Issuing cash flow forecasts also enhances the likelihood that reported cash flows will predict future cash flows and decreases firms' abnormal operating cash flows in the years following their first cash flow forecasts (Call, 2008). Call (2009) finds that when cash flow forecasts are provided, investors assign more weight to the cash flow component of earnings in stock valuation and investors in the US put more emphasis on cash flow information into stock prices when such information is available. Investors can view the presence of a cash flow forecast as a sign of the importance of the firm's underlying cash flow information (Call, 2008, 2009).

The benefits of cash flow forecasts are not confined to users of forecasts. Analysts also benefit from issuing cash flow forecasts when they concurrently issue earnings forecasts. Several studies show that the presence of cash flow forecasts indirectly improve the accuracy of analysts' earnings forecasts, thus likely increasing analysts' incentives to produce cash flow forecasts. Prior research shows that analysts' forecasts of earnings are more accurate when accompanied by cash flow forecasts (Call et al. 2009; Pae et al. 2007), suggesting that analysts adopt a more structured and disciplined approach to forecasting earnings when they also issue cash flow estimates. According to Pae et al. (2007), analysts who start to issue cash flow forecasts tend to issue more accurate earnings forecast relative to those who do not issue cash flow forecasts. Moreover, analysts who stop issuing cash flow forecasts experience reductions in their earnings forecast accuracy relative to those who continue issuing cash flow forecasts. Call et al. (2009) further find that analysts who issue cash flow forecasts have a better understanding of the time-

series properties of the earnings process and are less likely to get fired, suggesting that cash flow forecast accuracy is relevant to analysts' careers (see Lehavy 2009). Subsequent studies have found that individual characteristics, such as forecasting experience, brokerage house size, and the number of firms and industries followed, affect the production of cash flow forecasts by individual analysts (Ertimur & Stubben, 2005; Pae et al., 2007).

The demand for cash flow information among investors also influences incentives of managers to provide cash flow forecasts voluntarily. Managements issue cash flow forecasts not only to meet the demands of investors for cash flow information but also to signal good news in cash flows and preempt excessive earnings management (Wasley & Wu, 2006). Managers strategically disclose their cash flow forecasts to mitigate the negative effects of bad news in earnings; they are more likely to issue positive management cash flow forecasts when they expect bad news in earnings and are less likely to issue management cash flow forecasts when good news in earnings is primarily because of discretionary accruals (Wasley & Wu, 2006). However, management cash flow forecasts should not be considered a perfect substitute for analyst cash flow forecasts and vice versa. Compared with management, analysts generally provide cash flow forecasts more frequently and this suggests that analysts provide more timely cash flow information than managements (Pae and Yoon 2012).

Givoly, Hayn, and Lehavy (2009) examine the extent to which analyst cash flow forecasts are sophisticated and their accuracy relative to the accuracy of earnings forecasts. They find that cash flow forecasts are less accurate, more biased and less frequently revised during the forecast period than earnings forecasts. Givoly et al. (2009) report that cash flow forecasts appear to be naïve extensions of analysts' earnings forecasts as cash flow forecasts can be easily replicated by investors by adding back the depreciation and amortization expenses to analysts'

earnings forecasts. They document that cash flow forecasts provide limited information on expected changes in working capital and that estimates of expected accruals obtained from earnings and cash flow forecasts work equally as well as other commonly used accrual models. Finally, Givoly et al. (2009) find evidence suggesting that cash flows only weakly associate with annual stock returns, and thus do not appear to be a good surrogate for the unobservable market expectation of cash flows. Givoly et al. (2009) conclude that analysts' cash flow forecasts are less accurate and of lower quality than analysts' earnings forecasts and that DeFond and Hung's (2003) "demand hypothesis" may have limited use in explaining analyst propensity to produce cash flow estimates. Their findings directly call into question the incremental usefulness of cash flow forecasts to capital market participants. In contrast, McInnis and Collins (2011) and Call et al. (2009) find that cash flow forecasts provide useful information incremental to earnings forecasts. Moreover, these cash flow forecasts can also serve as a disciplining mechanism to managers' financial reporting behavior when accompanied with earnings forecasts because of the implicit information contained about accruals.

Contrary to Givoly et al.'s (2009) results, Call et al. (2013a) argue that cash flow forecasts include meaningful and useful accrual adjustments to analyst earnings estimates. Their main tests rely on the analysis of 90 full-text analyst reports. They find that the majority of cash flow forecasts in the research reports include explicit adjustments for working capital and other accruals. Further, they report that tests that compare the accuracy of analyst cash flow forecasts with time-series cash flow estimates produce evidence supporting the superiority of the former. Finally, they document a significant price reaction to cash flow forecast revisions controlling for earnings forecast revisions. Call et al. (2013a) conclude that cash flow forecasts are useful to investors in the investment decision process.

Blinski (2014) find that analysts report cash flow forecasts when earnings are of high quality. This evidence suggests that earnings forecasts issued with cash flow estimates will be of high quality concerning the positive relationship between earnings per share forecast accuracy and earnings quality in Bradshaw et al. (2001), Hughes et al. (2008) and Bilinski and Eames (2012). Other studies in this field give insights into how firms choose to meet either cash flow or earnings expectations (Brown et al., 2008), and investors' reaction to firms beating analyst cash flow forecasts (Zhang, 2008).

In summary, although earnings are a summary of performance measures that comprise cash flows and accruals, they explain only a small fraction of the total variation in stock performance because earnings may not reflect the underlying economic events in a timely manner (Hayn, 1995). Consequently, recent literature emphasizes both cash flow forecasts and earnings forecasts as important for firm valuation and performance measure purposes (DeFond and Hung, 2003). There is evidence that a large portion of the investment community relies more on cash flows than earnings in the decision-making processes (FASB, 1978; Golub and Huffman, 1984; Call, 2008).

2.1.9 Liquidity Risk and Accounting-related Liquidity

As an important systematic risk, liquidity risk is defined as a stock's return sensitivity to unexpected changes in aggregate or market liquidity (Pastor and Stambaugh 2003), capturing the degree of gain or loss to investors as market liquidity changes (Ng 2011). Prior studies have employed several liquidity measures. These studies typically focus on a single dimension of liquidity such as an asset's order flow, the trading cost, transaction quantity and the price reaction to trading volume to measure illiquidity. For example, Amihud and Mendelson (1986)'s

bid-ask spread measure relates to the trading cost dimension, the turnover measure of Datar et al. (1998) captures the trading quantity dimension, and the measures in Amihud (2002) and Pastor and Stambaugh (2003) use the concept of price impact to capture the price reaction to trading volume. Pastor and Stambaugh (2003) integrate their concept of liquidity into empirical tests by estimating the correlation of a firm's stock return to aggregate liquidity (liquidity beta). Acharya and Pedersen (2005) further address four possible types of systematic risk between the firm and the market in return and liquidity. Liu (2006) proposes a new liquidity measure for individual stocks, defined as the standardized turnover-adjusted number of zero daily trading volumes over the prior 12 months. This measure captures multiple dimensions of liquidity such as trading speed, trading quantity, and trading cost, with emphasis on trading speed which is the continuity of trading and the potential delay or difficulty in executing an order, which existing studies ignores (Liu 2006). Liu (2006) find that the stocks that the new liquidity measure identifies as less liquid tend to be small value, low-turnover, high bid-ask spread, and high return-to-volume stocks. His study confirms that liquidity is an important source of priced risk for asset pricing.

Prior studies on liquidity risk also explain the difference between liquidity risk and market liquidity (Acharya and Pedersen 2005; Korajczyk and Sadka 2008; Sadka 2011; Watanabe and Watanabe 2008). The liquidity risk and market liquidity are different concepts (Acharya and Pedersen, 2005; Korajczyk and Sadka, 2008; Lou and Sadka,2010). The relevant macroeconomic condition for liquidity risk is market liquidity. Market liquidity reflects the ability to trade large quantities of stocks quickly, at low cost, and without moving the price at the aggregated market level (Pastor and Stambaugh, 2003). The information environment of a stock is an important determinant of the stock liquidity (Healy & Palepu, 2001; Ravi & Hong, 2014). Prior studies document information asymmetries in markets wherein different information sets

enable sophisticated or informed investors to outperform relatively uninformed investors (Grossman & Stiglitz, 1980; Hellwig, 1980; Kyle, 1985). Market makers and other market participants lose when trading with information motivated traders and market makers and other market participants respond to changes in information asymmetry by adjusting bid-ask spreads (Easley & O'Hara, 1987; Glosten & Harris, 1988). A decrease in market liquidity typically reflects a macroeconomic condition in which there is investor and market maker outflow from the equity markets among high market volatility and risk aversion (e.g., Chordia et al., 2000; Pastor and Stambaugh, 2003; Acharya and Pedersen, 2005; Brunnermeier and Pedersen, 2009). When market liquidity decreases, different stocks will experience different degrees of investor and market maker outflow because investors and market makers have different concerns about uncertainty in future returns and adverse selection. In equity markets, adverse selection and uncertainty concerns induce traders and market makers to price-protect themselves and reduce their willingness to trade (Barry & Brown, 1986; Copeland & Galai, 1983; Merton, 1987). If their willingness to trade reduces, market liquidity drops. Transaction costs increase when liquidity decreases (Amihud, 2002; Amihud & Mendelson, 1986), leading to increases in the cost of equity capital (Verrecchia, 2001).

Prior literature shows that liquidity risk affects the impact of information quality on the cost of equity capital (Sadka 2006; Ng 2011). Lambert et al. (2007) who show that accounting information quality can influence cost of capital either directly through the firm's assessed covariance with other firms' cash flows or indirectly through the firm's expected cash flows. Lambert et al. (2007) develop a model, based on the Capital Asset Pricing Model (CAPM), in which information quality affects the cost of equity via an impact on systematic risk, specified as the (unobservable) forward-looking beta. Ng (2011) argue that when market liquidity changes,

information quality associated with stock contribute to levels of investors and market maker' outflow or inflow from the equity market as investor demand for the stocks is associated with uncertainty and adverse selection. Focusing on ordinary shares of stocks listed on NYSE, AMEX, or NASDAQ from January 1983 to December 2008, Ng (2011) find that higher information quality is associated with lower liquidity risk which in turn lowers cost of capital. Ng's finding suggests that stocks that are subject to greater information asymmetry are more sensitive to large unexpected market liquidity changes. Sadka (2011) confirms the important role of accounting information during liquidity events by examining Lang and Maffett (2011) and Ng (2011).

Chen et al. (2017) examine a liquidity risk-based channel through which accounting quality affects the post-earnings-announcement drift (PEAD). PEAD reflects investors' underreaction to earnings news and is viewed as one of the major accounting-based anomalies (Chen et al. 2017). Chen et al. (2017)'s focus on the accounting component of liquidity risk is motivated by the recent evidence that liquidity risk is an important systematic risk (Pastor and Stambaugh 2003; Liu 2006; Sadka 2006) and earnings quality is negatively associated with liquidity risk (Ng 2011). Chen et al. (2017) show that accounting-associated liquidity risk plays a more important role than its nonaccounting-associated counterpart in explaining one of the important accounting-based anomalies. The question now arises about whether there is a link between media coverage of ESG issues and accounting-related liquidity risk.

Chapter 3: Research Methodology

This dissertation investigates how a firm's negative ESG issues covered by media affects information asymmetry on stock markets, a key part of financial markets. Similar to Cormier and Magnan (2014b), I argue that the relationship between a firm's environmental, social and governance (ESG) issues, disseminated by media, and information asymmetry rests on 1) the transformation of investors' expectations of the impact of corporate social responsibility (CSR) actions, 2) a realization that effective risk management underlies a firm's long-term performance and growth, and 3) the contribution by different types of risk to information uncertainty.

I posit that the media coverage of a firm's ESG issues may relate to the level of information asymmetry between the firm and stakeholders (Cormier and Magnan 2017) regarding the firm's future financial performance (Jensen, 2001), financial risk (Kolbel et al. 2017), social responsibility and ethical concerns (Kim et al. 2012). This asymmetry increases uncertainty surrounding the firm's underlying earnings which compromises stakeholders' ability to correctly evaluate and predict the firm's future earnings and performance, thereby incentivizing analysts to issue cash flow forecasts along with earnings forecasts. I predict that a firm's media coverage of ESG issues is related with the incidence of issuing analyst cash flow forecasts. If analysts have the ability to identify the implications of media coverage of ESG issues on predicting future cash flows, then their cash flow forecasts should be more accurate. If media coverage of ESG issues benefit the investors by reducing information asymmetry in the equity market, then the next question is how do equity investors react when they receive negative information about a firm's ESG issues? I investigate the role of analysts' cash flow forecasts in relation to the media coverage of ESG issues and liquidity risk. The next sections explain the theoretical framework I use to test my hypotheses.

3.1 Stakeholder Theory

Stakeholders have a reciprocal relationship with a firm as they can contribute to the firm's value creation while the firm's actions and performance affect their well-being. The modern stakeholder theory was outlined by Freeman (1984). According to stakeholder theory, to succeed over the long term, firms must satisfy the often-conflicting demands of a diverse group of stakeholders (Freeman, 1984, 1994). From the stakeholder's perspective, an organization is considered as part of the societal system consisting of groups that work together to achieve the social system goals and the synergy and integration among all fundamentals of the business model and its processes are essential in achieving overall sustainable performance objectives (Donaldson and Preston, 1995; Freeman, 2010).

Freeman (1984) bases the stakeholder theory on the idea that managers should have a fiduciary relationship to stakeholders, and this implies that the scope of managers' responsibility goes beyond the welfare of shareholders. Donaldson and Preston (1995) claim that an effective stakeholder-management relationship could be crucial to improving a firm's financial performance. Freeman and Evan (1990) encourage the positive effect of this relationship by claiming that an efficient stakeholder-management relationship can increase a firm's ability to adapt to changes to external demand, which is essential to maintaining a firm's operating performance. Jones (1995) argues that a strong stakeholder-management relationship monitors managers, so that they do not distract their attention away from financial goals.

In addition, Jensen (2002) claim that ignoring or neglecting any important stakeholders of a firm negatively impact long-term market value when the firm targets long-term performance, implying that the maximization of shareholder value is not sufficient. Alexander and Buchholz (1978) and Bowman and Haire (1975) argue that corporate ESG performance is a proxy for

management quality. ESG performance improvement signals that a firm has a high-quality management because it indicates their efforts and understanding on how to improve a firm's relationship with its environment, whether internal or external. Clearly, Freeman's (1984) stakeholder theory and Jensen's (2001) "enlightened value maximization" theory identify the maximization of firms' ESG performance and the creation of long-term value of the firms as the criteria for balancing the interests of all stakeholders. Mitchell et al. (1997) expanded the Freeman's definition of a stakeholder by synthesizing the concepts of power, legitimacy, and urgency. Mitchell et al. (1997) primarily point out that companies should not ignore any party that a) can affect (help or hurt) or be affected by the business; b) has legitimate stake in the firm (contracts, rights, risks, moral claims); and c) must be dealt with promptly. Otherwise, mistreated stakeholder groups would withdraw their support for the firms (McWilliams et al., 2006). Instrumental stakeholder theory suggests good management implies positive relationships with key stakeholders (Waddock and Graves 1997; McGuire et al. 1988; Ullman 1985) as the stakeholder theory is focused on managing relationships between firms and stakeholders and reducing contracting costs.

Stakeholder theory suggests that ESG sustainability activities and performance enhance the long-term value of the firm by fulfilling the firms' social responsibilities (Campbell, 2007), meeting their environmental obligations (Clarkson et al., 2011), and improving their reputation (Weber, 2008). For example, a positive socially responsible image such as environmental awareness, and healthy employee relations, effective community collaboration and government relations may increase employees' morale and productivity, reduce stakeholder management cost, increase sales, and incentivize government to provide competition-enhancing tax breaks (e.g., Bhandari and Kohlbeck 2018). Consequently, superior ESG sustainability performance

should lead to better financial outcomes because relationships with key stakeholder groups are improved.

In the context of shareholder wealth maximization and stakeholder welfare maximization, ESG sustainable activities create both synergies and conflicts. Clearly, Freeman (1984) suggests that meeting the needs of diverse stakeholders will lead to favorable financial performance. Serving the implicit claims of stakeholders enhances the company's reputation in a way that positively influences its financial performance over the long term (Freeman 1984; Makni et al. 2009). Conversely, dissatisfying stakeholders may have an adverse effect on financial performance (Preston and O'Bannon 1997). Based on this explanation, a company perceived by its stakeholders as having a good reputation will yield better financial performance through the reputation-building mechanism over time. This reputation building is particularly important in firms with the ESG activities because those firms are repetitive players in the financial market. A possible benefit of positive CSR-related practices comes from reputational benefits. Varadajaran and Menon (1988) argue that CSR, even philanthropic CSR, can help increase a company's revenue by building a brand in a socially responsible aspect. Their line of reasoning, connecting CSR with reputational benefits, can be supported by empirical evidence from Turban and Greening (1996). Turban and Greening (1997) and Albinger and Freeman (2000) argue that a firm can gain reputation through CSR activities, and will in turn become more attractive to employee applicants. Empirical evidence suggests that firm's CSR activities will increase firm reputation and consumers and other stakeholders will thus have favorable attitudes on firm products, thereby increasing sales and gaining consumer loyalty. Creyer (1997) shows that firms with the high level of business ethics provide significantly positive influence on consumer purchase decision. Mohr et al. (2001) report that the level of CSR activities affects consumer

purchase decision making along with firm investment decision. Particularly, they find that consumers frequently base their purchasing decisions on whether firms behave ethically. Crespo and del Bosque (2005) provide evidence that firms with ethical standards and a clear philosophy of social responsibilities, respect for trustworthiness in its relationships with the stakeholders, are more likely to achieve better economic performance. Like R&D and advertising dimensions of a firm, CSR (in the form of socially responsible products, cause-oriented marketing, philanthropy) has been claimed to improve brand evaluation and enhance customer loyalty and attract new customers (Hillman and Keim, 2001; Hill et al., 2007; Servaes and Tamayo, 2013). Bhattacharya and Sen (2004) suggest that socially irresponsible firms could attract price-sensitive consumers, while socially conscious consumers consider the CSR brands (Brammer and Millington, 2008). Maintaining qualified employees is also crucial for firms with CSR activities to remain competitive. Firms can hire competent staff through outstanding CSR activities. Similarly, CSR can be used to attract, motivate, and retain high-quality talent (Turban and Greening, 1997; Brekke and Nyborg, 2008). Furthermore, Fisman, Heal and Nair (2005) find that social issue participation is positively associated to firm financial performance, but only in advertising-intensive industries.

Overall, while the stakeholder theory focuses on recognizing maximization of firms' ESG performance and the creation of long-term value of the firms through balancing stakeholders' interests, it also suggests that CSR can be strategic (Baron, 2001; McWilliams et al., 2006). Specifically, CSR can be associated with a firm's financial performance through intangible assets and stakeholder engagement (Barnett and Salomon, 2012; Mishra, 2017), and an insurance-like protection (Schnietz and Epstein, 2005; Godfrey et al., 2009).

Stakeholder theory considers CSR an investment. Accordingly, Baron (2001) created the term “strategic CSR”, which refers to CSR being used for value-seeking purposes. McWilliams et al. (2006) argue that such strategic CSR behavior can be viewed as a positive externality. Although stakeholder theory does not address the inherent agency problems, management literature does recognize them. Management literature separates “stakeholder management” from “social issues participation” (Hillman and Keim, 2001). Theoretically, a company’s financial performance hurts when the company engages in activities irrelevant to its stakeholders (Brammer and Millington, 2008). CSR is also hypothesized to act as insurance against regulatory, legislative, or fiscal risks (Hillman and Keim, 2001; Schnietz and Epstein, 2005). Implementing an event study of 178 negative legal and regulatory actions, Godfrey et al. (2009) find that institutional CSR activities—those aimed at a firm’s secondary stakeholders or society at large provides an ‘insurance-like’ benefit. Porter and Kramer (2006) argue that companies should think of CSR as a strategic tool for shareholder value creation, rather than focusing on responsive CSR which is viewed as a source of costs and based on the idea that economic growth comes at the expense of social welfare or vice versa (Friedman, 1970). Porter and Kramer’s arguments (2006) can be supported by the evidence of Hillman and Keim (2001). They separated social performance in two components: stakeholder management, including primary stakeholders (shareholders, employees and customers) and social issue participation which indicates the utilization of corporate resources for dealing with social issues outside of the firm main strategies. They provide evidence that social performance through stakeholder management is directly linked to shareholder value creation whereas social issue participation is not. Porter and Kramer (2011) later define the process of strategic CSR as a means to create “shared value” and argue that proactive CSR management is a tool used to increase a firm’s competitive position

and is thus positively impacting its operating and financial performance. In this view, being a source of competitive advantage and even innovation, CSR can benefit both society and corporate financial performance. Therefore, strategies for attaining competitive advantage (Porter & Kramer, 2006, 2011) and cause-related marketing (Varadajaran & Menon, 1988), emphasize the idea that ESG performance and financial performance can be positively related if a company uses CSR strategically.

Kurucz, Colbert and Wheeler (2008) point out four primary reasons for companies to engage in CSR activities: cost and risk reduction, gaining competitive advantage, developing reputation and legitimacy and seeking win-win results through synergistic value creation. Another approach is that ESG performance can relate to operating performance through cost and risk reduction. Koelher and Hespenheide (2013) identify ESG issues which can directly affect a company's financial performance by impacting its operations and sales. Negative impact of ESG issues could be associated with product risks (contaminated chemicals, consumer boycotts, recalls), supply chain risks (child labor, natural resource exploitation) or even operational risks (employee strikes, penalties and fine associated with environmental and social issues). Barnett (2007) argues that improving honesty and strengthening the relationship with stakeholders lead to reduced transaction costs (decreasing employee turnover, improved talent pool, union avoidance), hence improving financial performance, supporting the importance of stakeholder management in the same perspective. From the environmental perspective, Porter and Van der Linde (1995) and King and Lenox (2000) argue that low level of environmental performance leads to competitive disadvantage, as it signals operational inefficiency.

Some studies also indicate that not all stakeholders are the same and not all the firms bear the same stakeholder pressures. Some stakeholders are more important than others for the

survival and success of the firm (Cummings & Doh, 2000; Mitchell et al., 1997), while some firms are more vulnerable than others to pressures from stakeholders (Fiss & Zajac, 2006; Oliver, 1991; Pfeffer & Salancik, 1978). Managers may take actions to improve ESG performance that benefit particular stakeholders (shareholders) who are powerful to influence its compensation. Cormier et al. (2005) argues that the managers' consideration of stakeholders' interests is a key determinant of focus on social and environmental performance and disclosures. However, these ESG sustainability activities may require extensive resource allocation that could conflict with shareholder wealth maximization objectives and force management to solely invest in activities that would result in improvement of long-term financial performance.

Recent studies that draw on stakeholder theory investigate the association between CSR and analyst earnings forecasts. For example, Bhandari and Kohlbeck (2018) use stakeholder theory to argue that superior CSR performance should lead to better financial results because of the improved relationships with key stakeholder groups and that socially responsible firms are able to mitigate the risk of performance volatility, which helps enhance analyst forecasting behavior. Using stakeholder theory, Luo et al. (2014) show analysts play a pivotal information-bridging role in the corporate social performance–corporate financial performance relationship by examining the mediating role of analyst recommendations. Other studies that use stakeholder theory include Dhaliwal et al. (2012), Cormier et al. (2017). All these recent studies are relevant to my dissertation.

Drawing upon stakeholder theory, Kölbel et al. (2017) argue that media coverage of ESG issues provides conditions that are conducive to stakeholder sanctions and increase the potential for stakeholder sanctions on firms' irresponsible actions on ESG practices because media, as an important channel, reduces the constraint of stakeholders limited attentive capability. Kölbel et

al. (2017) also argue that media coverage of ESG issues increase the occurrence of stakeholder sanctions against one specific firm as the media coverage draws stakeholders' attention to those particularly irresponsible actions related to ESG issues (Lang and Washburn 2012). My dissertation also focuses on media coverage of ESG issues which reflect negative CSR-related actions surrounding a firm and I construct the measures of media coverage of ESG issues based on the data provided by RepRisk AG.

3.1.1 Agenda-setting theory

Prior ESG literature that relies on agenda-setting theory documents that agenda-setting theory has been integrated with stakeholder theory (Caroll 2010; Tang and Tang 2016). Agenda-setting theory suggests that media coverage of ESG issues coordinates the attention of various stakeholders on a particular ESG issue at a specific firm and this media coverage increases the salience of the issue in the public agenda (Carroll and McCombs 2003; McCombs and Shaw 1972; Tang and Tang 2016). Agenda-setting theory suggests that media coverage increases the potential of stakeholder sanctions because the more stakeholders within a firm's stakeholder network that draws attention to a specific firm's ESG issues, the larger the number of stakeholders that decide to sanction the firm (Kölbel et al. 2017). Kölbel et al. (2017) argue that the reach of the media outlet influences the agenda-setting effect of the media coverage of ESG issues. In RepRisk database, ESG issues news and articles reported by media classified into three levels of reach of the media outlet. *High reach* refers to high influence sources including the Financial Times, the New York Times, the BBC, the CNN International. *Medium reach* refers to medium influence sources including most national and regional media, international NGOs and state, national and international governmental bodies with a circulation of at least 150,000. *Low*

reach refers to low influence sources including local media, local newspapers with a circulation of less than 150,000. Media coverage of CSI in high reach has a stronger agenda-setting effect than that in medium or low reach because it has an international readership and is exposed to a wider range of stakeholders internationally and locally (Kolbel et al. 2017). Therefore, the reach of negative ESG issues coverage determines the number of stakeholders who draw attention to ESG issues and may affect the potential of stakeholder sanctions on firms' future expected earnings. I consider the reach of media outlet as one of the important characteristics of media coverage of ESG issues in testing the relation between media coverage and analyst cash flow forecasts. Following Kölbel et al. (2017), I use the reach of a media outlet as the extent to which the media coverage can reach a firm's stakeholder network.

Kölbel et al. (2017) also argue that the more severe media coverage of ESG issues, the more decisive corporate social irresponsibility attribution and thus more harsh stakeholder sanctions. The severity of ESG issues coverage reflects CSI attribution that explains why firms should be blamed for CSI actions and the severity also increases the potential for stakeholder sanctions (Kolbel et al. 2017). I also consider the severity of media coverage of ESG issues as another important characteristics of media coverage of ESG issues in testing the relation between media coverage and analyst cash flow forecasts. Following Kölbel et al. (2017), I use the severity of CSI media coverage as the extent to which the criticism reported by media coverage is harsh.

3.1.2 Financial Analysts and Media coverage of ESG issues

In this dissertation, I explore whether and how analysts react to negative and severe ESG issues revealed by firms' stakeholders and disseminated by media to the public.

Recent studies that document the association between CSR and analysts forecasting include Cormier and Magnan (2014), Bhandari and Kohlbeck (2017), and Bernardi and Stark (2018). In CSR research, few studies focus on negative ESG information or information on corporate social irresponsibility (i.e., CSI) separately and how this information affects different capital market participants. Recent studies emphasize that CSR and CSI are theoretically distinct constructs (see Mishra and Modi 2013). CSI reflect firms' irresponsible social actions which are not related to managers' strategic motives to improve firm reputation or to cover up their opportunistic behavior (Strike et al. 2006). Cho et al. (2013) find that the influence of negative CSR performance is much stronger than that of positive CSR performance in reducing information symmetry, indicating the importance of separately considering positive and negative CSR performance when evaluating the effects of CSR-related information.

Managers have the tendency and incentives for portraying positive CSR performance and delaying communicating negative CSR information (Lee 2017). Anderson (1988) finds that professional analysts put greater weight to characteristics perceived as negative compared to those perceived as positive. In a verbal protocol study, Anderson (1988) shows that financial analysts have significant interest in non-financial information, particularly those related to product lines, competitors, and customers, however, he did not explicitly examine the role of negative non-financial information in capital market evaluation. Bouwman, Frishkoff, and Frishkoff (1995) explore the importance of GAAP-based information to financial analysts in examining companies and provide evidence that such information was mainly used as a screening function for investments. They suggest that analysts looked at more qualitative, future-orientated, non-financial information in deciding to invest in a company. Recent empirical studies show that analysts use non-financial information in their earnings forecasting (Dhaliwal

et al. 2012; Nichols and Wieland 2009; Orens and Lybaert 2007; Simpson 2010). These studies document that the consideration of non-financial information help reduce analysts' earnings forecast error and dispersion (Dhaliwal et al. 2011; Dhaliwal et al. 2012; Nichols and Wieland 2009) and analysts issue more optimistic recommendations for firms with higher CSR ratings (Ioannou and Serafeim 2014) than those with lower CSR ratings. This line of research mainly focuses on positive CSR disclosures and performance. In this dissertation, I directly look at negative ESG issues revealed by media based on criticisms from stakeholders to the public and examine how these negative ESG issues impact analysts' decision making.

To form my arguments on the link between analysts and media coverage of ESG issues, I follow the stakeholder theory arguments and reputation-building explanations (e. g., Freeman 1984; Makni et al. 2009; Jensen 2002; Calton and Payne 2003; Sherer et al. 2006; Jo and Harjoto 2011, 2012; Harjoto and Jo 2015). Freeman's (1984) stakeholder theory states that CSR is used as a mechanism to communicate better between managers and stakeholders as firms should go beyond maximizing shareholder value to address the interests of their stakeholders, basing the stakeholder theory on the idea that managers should have a fiduciary relationship to stakeholders. Incorporating information economics, Jones (1995) further develops stakeholder theory under the assumption of information asymmetry between managers and stakeholders. He proposes that building a reputation for honest actions and ethical behavior is important because such reputation can reduce costs associated with information asymmetry, which in turn can enhance firm value. Satisfying the legitimate legal and moral claims of stakeholders can be a means for the firm to maximize its organizational wealth (Donaldson and Preston 1995; Jones 1995; Jones and Wicks 1999).

Stakeholder theory suggests that ESG activities and ESG performance enhance the long-term value of a firm by fulfilling the firm's social responsibilities (Campbell, 2007), meeting their environmental obligations (Clarkson et al., 2011), increasing stakeholders' willingness to contribute resources and efforts to support the firm's operations (Deng et al. 2013), and improving the firm's reputation (Weber, 2008). Positive CSR activities will advance a firm's reputation (Turban and Greening 1997; Albinger and Freeman 2000; Greening and Turban 2000), which is particularly important because those firms are repetitive players in the financial market. Jo and Harjoto (2011, 2012) suggest that CSR engagement is considered as a vehicle to mitigate conflicts of interest among various stakeholders through recursive communication. Godfrey (2005) argues that corporate philanthropy, a particular aspect of CSR, is a "positive moral capital that acts as character evidence on behalf of the firm" (2005: 788), when caught doing a bad act. Similarly, Peloza (2006) argues that CSR "can offer a crucial advantage to managers by providing a means of insuring financial performance against negative events" (2006: 52), and Schnietz and Epstein (2005) find evidence that CSR contributes to the firm's reputation for social responsibility, which protects firms from stock declines associated with crises. Sen, Bhattacharya, and Korchun (2006) capture this protective aspect of CSR, which they refer to as a reputational shield, helping to protect a firm in the case of negative events. In such cases, reputation mitigates information asymmetry (Diamond 1991; Sufi 2007).

Prior studies also indicate that CSR reduces information asymmetry as it is a signal of management integrity and ethics. To the extent managers are more (less) likely to truthfully provide relevant stakeholders with firm information, CSR performance can indicate disclosure quality. For example, Kim et al. (2012) show that managers of socially responsible firms are likely to produce high-quality financial reports and reduce earnings management and thus

provide better accounting information quality. Koh and Tong (2013) find that auditors charge higher audit fees for firms who have poor CSR performance because such firms have more incentives to engage in wrongdoing. Hoi et al. (2013) find that firms are more likely to engage in aggressive tax-avoidance activities when they have adverse CSR performance. Kim et al. (2014) also examine whether CSR mitigates the risk of a stock price crash, defined as the conditional skewness of return distribution, which captures asymmetry in risk and they find significant results. Lee (2017) finds that firms provide more accurate earnings forecasts when they engage in CSR activities, consistent with the transparent disclosure hypothesis based on stakeholder theory (Freeman1984). Cui et al. (2018) provide evidence of an inverse association between CSR engagement and the proxies of information asymmetry after controlling for various firm characteristics, consistent with the stakeholder-theory-based reputation-building explanation. All these studies suggest that with the integration of both CSR and financial markets data, CSR is differentially related to firms' outcomes and experiences in the market (Lee et al. 2018).

According to the stakeholder theory, firms in order to succeed over the long term, must satisfy the conflicting demands of diverse stakeholders (Freeman, 1984, 1994). Freeman (1984) suggests that meeting the needs of diverse stakeholders will lead to favorable financial performance. Serving the implicit claims of stakeholders enhances the company's reputation in a way that positively influences its financial performance over the long term (Freeman 1984; Makni et al. 2009). On the contrary, dissatisfying stakeholders may have an adverse effect on financial performance (Preston and O'Bannon 1997) and may cause stakeholder sanction against firm's irresponsible actions. Based on this explanation, a company perceived by its stakeholders as having a good reputation through positive CSR performance will yield better financial performance through the reputation-building mechanism over time. instead, firms who are

exposed to negative ESG issues reported by stakeholders and communicated by the media may have reputation deteriorating concern and can later face negative financial performance prospect. Negative CSR performance resulting from engaging in socially controversial and irresponsible activities informs investors of potential changes in firms' earnings potential or risk owing to CSR-related stakeholder mismanagement. Media coverage of ESG issues can reflect the broken mutual trust and cooperation between managers and stakeholders and increasing transaction costs associated with information asymmetry (Cho et al. 2013; Kim et al. 2014). Clearly, the reputation building explanation suggests that firms with media coverage of CSI or ESG issues are associated with more difficulties of sustaining their reputation capital and are associated with higher information asymmetry between managers and investors due to potential concerns about earnings disclosure quality and management ethics (Kim et al. 2012), leading to more intense monitoring from high media visibility and attention (Fiss & Zajac, 2006). Firms that receive media coverage of ESG issues are also associated with weaker social responsibilities and financial reporting issues (Clarkson et al. 2008; Cheng et al. 2011). Prior literature also suggests that firms with a lower degree of social responsibility are characterized by less reputation, high information asymmetry, high risk, and providing lower quality of disclosures (see Bechetti et al.2013). Since financial disclosure is considered as a form of social responsibility (Gelb and Strawser 2001; Jo and Kim 2008; Kim et al. 2012), firms that receive media coverage of ESG issues should also tend to provide more vague disclosures (e.g., Diamond and Verrecchia 1991; Lambert et al. 2007) because firms who do not act honestly and ethically on behalf of stakeholders' interests to enhance corporate reputation are less likely to develop a reputation for transparent disclosures (Lee 2017).

The negative impact of ESG issues covered by the media should not be ignored. Negative impact of ESG issues could be associated with product risks (contaminated chemicals, consumer boycotts, recalls), supply chain risks (child labor, natural resource exploitation) or even operational risks (employee strikes, penalties and fine associated with environmental and social issues), which would hamper business operations and sales (Dyck,Morse and Zingales 2010). For example, Delmas and Toffel (2004) was the first study to develop a framework describing how stakeholders including regulators, customers, activities such as non-governmental organizations (NGOs), local communities and industry associations impose institutional pressures on firms. Stakeholders' impact on firms' performance could be imposed by pressures such as 1) extracting fines and sanctions in the case of regulatory organizations and 2) boycotting the firms in the case of employees and customers who care about ESG concerns and 3) damaging the firm's reputation in the case of activists and NGOs (Cordeiro and Tewari 2015). Rehbein, Waddock, and Graves (2004) find that shareholder activists tend to choose larger, more visible corporations as their campaign targets. While most firms face the risk of a consumer boycott, a risk that has been increasing steadily in recent decades (Friedman, 1991; Gelb, 1995; John & Klein, 2003; Sen, Gurham-Canli, & Morwitz, 2001), more visible companies face the additional risk of becoming targets of politically motivated consumer boycotts aimed at the country with which they are identified (Ettenson & Klein, 2005; Ettenson, Smith, Klein, & John, 2006). More visible firms not only face more diverse stakeholder pressures but also more intense stakeholder scrutiny. Baker, Powell, and Weaver (1999) argue that firms receiving low levels of media attention are neglected and "define a neglected firm as one that is under less scrutiny by news agencies, financial analysts, and institutional investors than other firms" (1999: 47). Fiss and Zajac (2006) find that firms that are more visible and receive more media attention are more

vulnerable to stakeholder pressure "because of the resulting exposure to multiple stakeholder groups" and "face greater pressure to adapt the framing of their actions to pressure from multiple sources" (2006: 1177). Firms receiving higher levels of media attention therefore find themselves under greater levels of scrutiny from many stakeholder groups (Zyglidopoulos et al. 2012). As some stakeholders are more important than others for the survival and success of the firm (Cummings & Doh, 2000; Mitchell et al., 1997), some firms are more vulnerable than others to stakeholder pressures (Fiss & Zajac, 2006; Oliver, 1991; Pfeffer & Salancik, 1978).

Koelher and Hespenheide (2013) identify ESG issues which can directly affect a company's financial performance by impacting its operations and sales. These risks can also adversely affect earnings growth and persistence (Cormier and Magnan 2014b), which is a common objective of stakeholder sanctions. When negative events that indicate poor ESG performance heighten the business risks of a firm, the firm's future earnings are threatened. Stakeholders sanctions due to firms' negative ESG practices may then tend to hurt firms' earnings in order to attain leverage over the target firm (Lenox & Eesley 2009; Kolbel et al. 2017). Kolbel et al. (2017) provide direct evidence that firms that receive media coverage of CSI face higher financial risk, suggesting the risk-mitigating effect of CSR for a firm.

In this dissertation, I posit that firms with media coverage of CSI should be noticed by analysts as negative ESG issues are value relevant and salient to stakeholders, including investors. Consistent with prospect theory and framing-effect research is the hypothesis that the negative aspects of an object, event or choice are weighted more heavily than positive aspects in forming judgments (Kahneman & Tversky, 1984; Peeters & Czapinski, 1990). This literature suggests that individuals react more to losses or negative information than to gains or positive information. This proposition is supported by research showing that markets react more to

negative information than to positive information (Brown & Harlow, 1988). Media coverage of ESG issues may affect stakeholders' perceptions about a firm's future performance as they react more to negative than positive information in the market. Prior research in psychology also implies that negative information possesses greater diagnostic value (Skowronski & Carlston, 1989) and elicits more cognitive analysis (Taylor, 1991) than positive information. Stakeholders are not privy to all relevant information that affects their interest as they suffer information asymmetry from managers in firms (Greenwald and Stiglitz 1990). ESG issues disclosed by the media are of great interests to customers, employees, NGOs and regulators and should provide these stakeholders with more credibility for their actions and a stronger basis for their demands for firms' responses towards poor ESG performance (Cordeiro and Tewari 2015).

Analysts are important actors and information processors in capital markets as they generate forecasts based on analysis of publicly available information on firms (Lee et al. 2018). Analysts, as an important information intermediary role between firms and stakeholders including investors, should place greater reliability and reliance on publicly available media coverage of ESG issues as it signals information about a firm's socially irresponsible actions as important additional information on CSI activities besides CSR disclosures by firms. In addition, firms that receive media coverage of ESG issues are highly visible firms because they receive greater media attention due to the severe criticism by relevant stakeholders than those who do not. Prior studies suggest that the media plays an important role as an information intermediary and that media coverage impact a firm's information environment (e.g., Tetlock et al., 2008; Fang and Peress, 2009; Engelberg and Parsons, 2011; Griffin et al., 2011; Dougal et al., 2012; Kim et al., 2014a). Corporations rely on what the media report about them because the media are the main legitimate source of information asymmetry reduction for many stakeholders

(McWilliams & Siegel, 2001; Siegel & Vitaliano, 2007), who lack direct interaction with the corporation (Deephouse, 2000: 1098). The media are not only "vehicles for advertising and mirrors of reality reflecting firms' actions," they also are "active agents shaping information through editorials and feature articles" (Fombrun & Shanley, 1990: 240), thus having the power to influence the opinions of many stakeholders, as many communication studies indicate (Ader, 1995; Behr & Iyengar, 1985; Benton & Frazier, 1976; Dalton et al., 1998; McCombs & Shaw, 1972).

Using RepRisk database that measures a firm's exposure to ESG issues, Globner (2017) provides evidence that media coverage of ESG issues generate negative long-run stock returns after controlling for risk factors, industries or firm characteristics, indicating that CSI destroys shareholder value. Globner (2017) also find that markets do not fully incorporate the negative consequences of ESG issues covered by media into stock valuations, consistent with the evidence that markets misprice the value and consequences of intangible assets (see Fornell et al. 2006; Chan,Lakonishok and Sougiannis 2001; Yermack 2006; Hong and Kacperczyk 2009; Gompers, Ishii, and Metrick 2003; Bebchuk, Cohen, and Ferrell 2009; Giroud and Mueller 2011; Edmans 2011; Edmans, Li, and Zhang 2017; Lins, Servaes, and Tamayo 2016). Globner (2017) imply that investors being unaware of the risk and consequences of media coverage of ESG issues may be due to investors' limited capability to process and interpret firm's intangible information. However, analysts play a crucial information intermediary role between firms and stakeholders including investors, as shown in previous studies. The close observation and communication with different stakeholders who criticize firms about ESG practices in public exposes the firms' irresponsible activities to suppliers, customers, and employees easily exposed to financial analysts (Dong et al. 2015). Luo et al. (2014) document that financial performance

effect of corporate social performance can be better realized when security analysts incorporate firm social performance information, suggesting that these analysts are more likely to be catalysts that help establish the association between shareholder investment returns and firm socially responsible activities targeting broader stakeholder groups. Their study confirms that analysts play a crucial information-bridging role, through which shareholder and stakeholder views can be better aligned as more shareholders act as universal investors in the markets (Stout 2012). Media coverage of ESG issues criticized by stakeholders gives analysts more publicly available information (i.e., higher level of information supply on ESG aspects) to analyze and assess firms' future performance, which help their decision making. While recent studies such as Cormier and Magnan (2014), Bhandari and Kohlbeck (2017), and Bernardi and Stark (2018) document the association between positive CSR disclosures and/or activities and analysts forecasting, I focus on media coverage of ESG issues as CSI information available to public.

If media coverage of ESG issues are perceived to be value-relevant and useful information supply on corporate CSR actions, analysts would see these media coverage as an alternative public information source in their assessments in their forecasting tasks. This suggests that analysts should be responsive to a firm which receive media coverage of ESG issues as analysts would be expected to seek alternative public information in evaluating companies when they find corporate financial disclosures are not sufficient to form their judgement. In richer information environments, analysts may have more opportunities to interpret information and report more forecasts. The effect of media coverage of ESG issues on analysts forecasting may be significant.

However, previous studies show that CSR activities have not been fully incorporated into certain financial markets, such as in the pricing of corporate bonds (Menz 2010). While more

CSR reporting and disclosures are tantamount to more transparency in general (see Qiu et al. 2016), they can also make it more challenging for analysts to detect mispricing (Lee et al. 2018). Lee et al. (2018) argue that the increased amount of information can change the information environment in which analysts operate. If media coverage of ESG issues increases the supply of CSI information in public and contributes to a more efficient pricing environment, the information environment in which analysts operate can change. Therefore, reduced information asymmetry due to the supply of CSR and/or information, although positive to investors overall, can reduce the importance of the role of analysts in capital markets (Lee et al. 2018). In this case, analysts' services may be less demanded by investors with greater supply of ESG information, and the effect of media coverage of ESG issues on analysts forecasting may be insignificant.

3.2 Hypotheses

3.2.1 Analyst Issuance of Cash Flow Forecasts

I examine whether a firm that exhibits media coverage of ESG issues or CSI impact analysts' decision to issue cash flow forecasts.

Investors and the media have paid much attention to earnings forecasts. However, accrual-based earnings are subject to some estimation errors that make analysts forecasting difficult (see Dechow and Dichev 2002). Furthermore, earnings may be more prone to management manipulation both because many accruals are based on management estimates which create an opportunity to manage earnings and because management compensation is usually tied to earnings rather than cash flows (e.g., Edmonds et al. 2011). Since earnings are more easily manipulated and more difficult to forecast, earnings forecasts are of a lower quality than cash flow forecasts (Gleason & Lee, 2003; Park & Stice, 2000). Cash flows are less

subjective than accrual-based earnings (Levitt, 2002, p. 154; Penman, 2001, p.611; Wild, Bernstein, & Subramanyam, 2001, p. 532). The demand for cash flow information and cash flow forecasts increased substantially following the accounting scandals identified in the early 2000's (Edmonds et al. 2011). These scandals eroded investor confidence in the capital markets and reflected that earnings alone do not always predict future firm performance consistently and reliably (Jain & Rezaee, 2006). In contrast, cash flow information is arguably perceived as being more concrete and less susceptible to artificial manipulations than "pro-forma" or actual reported earnings (Edmonds et al. 2011).

Analysts' cash flow forecasts are becoming more common. Analysts provide cash flow forecasts along with earnings forecasts because cash flow information is useful in understanding the implications of current earnings about future cash flows and in assessing the financial conditions of companies (e.g., Pae and Yoon 2012). Prior studies suggest that cash flows are incrementally useful to earnings in valuing securities (Bowen, Burgstahler, & Daley, 1987). Prior literature documents that cash flow forecasts serve as an additional monitoring device for firms with poor earnings quality. DeFond and Hung (2003) provide evidence to suggest that cash flows are useful in helping investors interpret earnings. McInnis and Collins (2011) find that firms' accrual quality enhances after the initiation of analysts' cash flow forecasts. Specifically, McInnis and Collins (2011) find that analysts' cash flow forecasts make accrual manipulations more transparent and help constrain earnings management. Issuing cash flow forecasts also enhances the likelihood that reported cash flows will predict future cash flows and decreases firms' abnormal operating cash flows in the years following their first cash flow forecasts (Call, 2008). The quality of earnings forecasts may also depend on the cash flow forecasts. Prior research shows that analysts' forecasts of earnings are more accurate when accompanied by cash

flow forecasts (Call et al. 2009; Pae et al. 2007), suggesting that analysts adopt a more structured and disciplined approach to forecasting earnings when they also issue cash flow estimates. Compared to analysts solely issuing earnings forecasts, analysts issuing both cash and earnings forecasts are better able to identify the persistence of current earnings and thus provide more accurate earnings forecast (Edmonds et al. 2011). In turn, analysts issuing cash flow forecasts have a lower likelihood of being fired (Call et al., 2009). Brown et al. (2015) find that analysts consider reported earnings backed by operating cash flows as indicating high earnings quality. Researchers have argued that analysts' operating cash flow forecasts help investors assess the solvency and viability of a firm (Defond and Hung 2003; Graham, Harvery, & Rajgopal, 2005; McInnis and Collins 2011). Recent studies also document that the increasing incidence of cash flow forecasts has helped mitigate accruals mispricing (Mohanram 2014, Radhakrishnan and Wu 2014), and issuing cash flow forecasts increases analysts' target price accuracy (Hashim and Strong 2018). However, while multiple studies have documented the benefits of analysts' cash flow forecasts (Call, 2008; Call et al., 2009; Defond &Hung, 2003; McInnis & Collins, 2011), there are limited studies that explore the determinants of cash flow forecasts. I explore whether media coverage of ESG issues surrounding a firm may affect analysts' propensity to issue cash flows forecasts.

According to stakeholder theory, a firm exposed to media coverage of ESG issues may have negative reputation for acting dishonestly and/or unethically. These firms may also have exhibited weak CSR performance as they do not fulfill the legitimate and moral claims of the stakeholders who blamed the firms for CSI. Starks (2009) suggest that CSR activities can affect firm value through its effect on a firm's risk profile including regulatory, litigation, supply chain and product and technology risk. Luo and Bhattacharya (2009) document that corporate social

performance is negatively related to a firm's idiosyncratic risk. Negative impact of ESG issues surrounding a firm could be associated with business risks including product risks, supply chain risks or operational risks and thus negatively associated with the firm's future financial performance (Jensen, 2001). When criticizing a firm's ESG issues to the public, stakeholders impose pressures on firms to expect relevant, appropriate and effective firm responses. In the absence of sufficient firm response, stakeholders can utilize boycotts, lawsuits, and protests to significantly influence firm ESG behavior (Baron and Diermeier 2007; Doh and Guay 2006; Easley and Lenox 2006). In addition, the reputation building explanation based on the stakeholder theory suggests that firms with negative ESG issues revealed by the media are associated with inferior information environment and higher information asymmetry between managers and stakeholders if firms do not respond on a timely manner and increased potential for stakeholder sanction (Kolbel et al. 2017) consequently. Firms with media coverage of ESG issues may be more likely to engage in unethical financial reporting and aggressive earnings manipulation and ethical concerns regarding management (Kim et al. 2012), which in turn deteriorates firm value. Frecka (2008) show that unethical behavior is likely to be more severe when a high level of information asymmetry between managers and stakeholder exists. Jo and Kim (2008) suggest that an inferior information environment may encourage more unethical behavior in the form of aggressive earnings manipulation. Prior literature suggests that firms with poor CSR practices and/or negative ESG issues with stakeholders are characterized by less reputation, high information asymmetry, high risk, and providing lower quality of disclosures (see Bechetti et al.2013; Bhandari and Kohlbeck 2018) and managers of these type of firms may tend to provide more ambiguous disclosures to strategically hide information that is substantially sensitive to investors (e.g., Diamond and Verrecchia 1991; Lambert et al. 2007). CSI coverage of

the firms could show that these firms did not satisfy all related stakeholders beside shareholders and thus may have their reputation potentially damaged in public and receive expectations of lower future earnings and lower expected future cash flows and more risk (Kolbel et al. 2017). I posit that the media coverage of a firm may relate to the level of information asymmetry between the firm and stakeholders (Cormier and Magnan 2017), due to the poor stakeholder management and weak social responsibility practices and firms in turn may disclose more CSR information to maintain their reputation and avoid negative consequences of stakeholder sanctions, thereby reducing information asymmetry.

Prior studies have shown that CSR disclosures increases transparency by providing incremental positive or negative information about a firm performance to investors (Moser & Martin, 2012) and have provided evidence regarding the relation between the rationale behind bad news disclosure and firm reputation. Firms that receive CSI coverage may also explain or contextualize their poor CSR performance by disclosing more negative firm information to restore the image of the firm (Skinner 1994, 1997; and Goel and Thakor 2003; Skinner and Sloan 2002; Graham et al. 2005; Patten 2002; Clarkson et al. 2008) according to the stakeholder theory. I conjecture that firms with bad reputation disclosed through CSI coverage release more firm specific information in order to restore the image of the firm, therefore, reducing information asymmetry. Prior literature provides evidence that analysts also have the ability to reduce information asymmetry. Several studies suggest that analysts have a comparative advantage in interpreting specific industry or market sector trends and improving intra-industry information transfers (Piostroski and Roulstone 2004b; Clement 1999; Jacobs et al. 1999; Ramnath 2002). Other studies examine the impact of analysts on equity prices (Barth and Hutton 2000; Brennan et al. 1993; Hong et al. 2000) and analysts on the cost of capital (e.g., Easley and O'Hara 2004;

Bowen et al. 2008; Kelly and Ljungqvist 2012; Derrien and Kecskes 2013; Jung 2015). These studies indicate that analysts' activities contribute to increases in the fraction of quality of public information, thus reducing the cost of capital. In addition, several studies find that analysts' forecasts and recommendations affect stock prices (e.g., Givoly and Lakonishok 1979; Lys and Sohn 1990; Francis and Soffer 1997) and ratings (Cheng and Subramanyam 2008). The results of these studies suggest that analysts are important information intermediaries that help market participants reduce information asymmetry between managers and stockholders. Analysts, as information intermediaries, help to improve the firms' information environment (see Asquith, Mikhail, and Au 2005; Francis and Soffer 1997) and a consequence of analysts' role is to help improve the information environment (see Radhakrishnan et al. 2014).

If CSI coverage reduce information asymmetry, the role of analyst may be reduced. Lee et al. (2018) argue that the increased amount of information can change the information environment in which analysts operate. If CSI coverage increases the supply of CSI information revealed by stakeholders in public and firms' response to CSI coverage by providing more CSR disclosures and contributes to a more efficient pricing environment, the information environment in which analysts operate can change. Therefore, reduced information asymmetry due to the supply of CSR related information through CSI coverage and firms' CSR disclosure can reduce the importance of the role of analysts in capital markets (Lee et al. 2018). In this case, analysts may be less inclined to issue cash flow forecast for firms that are exposed to ESG issues than those who do not. Analysts' services may be less demanded by investors with greater supply of ESG information making analysts less motivated to issue cash flow forecasts.

One may argue that if the information that these firms disclose are opportunistic or unappreciated by the market, these disclosures may not be value-relevant and may not reduce the

information asymmetry between firms and their investors (Cahan et al. 2016). Globner (2017) show that CSI coverage is mispriced by the market because investors underestimate the negative consequences of ESG risks reflected in the media coverage of ESG issues. Also, the effect of CSI coverage on information asymmetry can be greater because CSI activities increase differences in opinion of various stakeholders and further obscure information environment (Cui et al. 2018). Herremans et al. (1993) and Mishra and Modi (2013) imply that negative CSR disclosures increase idiosyncratic return volatility, while positive CSR disclosures reduce idiosyncratic risk. In this regard, analysts become critical in their information intermediary role between firms and investors. Firm that are exposed to negative ESG issues covered by the media are more prone to exhibit poor earnings disclosure quality than those who are not, which increases the information asymmetry. This information asymmetry increases uncertainty surrounding the firm's underlying earnings and compromises other stakeholders' ability to correctly evaluate and predict the firm's future earnings and performance. As a result, stakeholders may demand more for cash flow information than earnings. Analysts may therefore be more likely to issue cash flow forecasts along with earnings forecasts for a firm which has higher level of media coverage of ESG issues than other firms who do not. Jung (2015) provides evidence that analysts who issue cash flow forecast along with earnings forecasts experience a reduced cost of equity capital, reduce information asymmetry and predict long-term earnings more accurately than those who issue only earnings forecasts, suggesting that cash flow forecasts provide high-quality information to market participants. Recent literature on cash flow forecasts also show that cash flow forecasts provide investors and other stakeholders with more information than earnings forecasts alone, resulting in better external monitoring of firms' financial reporting disclosures (e.g., Jung 2015; Mao and Yu 2015). These studies indicate that to

the extent that cash flow forecasts are useful in assessing a firm's earnings and performance and valuing securities, cash flow forecasts help reduce information asymmetry of firms who suffer from poor disclosure quality or earnings quality.

It is possible that media coverage on firms' ESG issues may make analysts less reliant on managers' reported accounting earnings on financial disclosures and more incentivized to consider cash flow information which is less prone to manipulation in their forecasting. In addition, cash flow forecasts may be correlated with higher demand for better accounting quality by firm stakeholders (Mao and Yu 2015). A firm with higher level of CSI coverage would raise investors concerns about management financial reporting and may make investors rely more on information generated by analysts. However, several studies show that media reduces information asymmetry. For example, Jiraporn et al. (2014) document that while CSR strengths are not related to credit ratings, CSR concerns are significantly related to credit ratings, consistent with the notion that CSR concerns quickly transmit to the public via news media, bringing more immediate impact on firm risk (Bae et al. 2018). What's more, media visibility is associated with more firm disclosures, thereby reducing information asymmetry (Neu et al. 1998; Cormier and Magnan 2003) and there is not enough evidence that low performers attempt to legitimize their actions by using their disclosures as tools of impression management (Tadros and Magnan 2019; Cho and Patten 2007; Patten 2002). Tadros and Magnan (2019) show that low performers with higher level of media legitimacy disclose more negative information than higher performers. Firms that receive higher level of CSI coverage may not be associated with poorer earnings disclosure quality due to more negative disclosures they provide, thereby decreasing the information asymmetry. Lu et al. (2017) find that the voluntary issuance of a standalone CSR report greatly increases the value of cash holdings as CSR reports provide incremental

information about firms' current and future costs and benefits due to their operations. They argue that CSR information reduces information asymmetry and improves the monitoring of managers' investment decisions and thus reduces managers' opportunities to misuse cash for value-destroying projects; consequently, the value of cash holding increases. Lu et al. (2017) also find that the effect of CSR reports on value of cash holdings is more pronounced for firms in a less transparent information environment and for firms with weaker external monitoring. This suggests that CSI coverage increases firms' responses by providing more disclosures to the public, reducing information asymmetry and the role of analysts. Therefore, I state the hypotheses in the alternative form in the following:

H1: A firm's media coverage of negative ESG issues is likely to reduce analyst's issuance of cash flow forecasts.

3.2.2 Cash Flow Forecast Accuracy

Next, I examine the relation between firms that exhibit media coverage of ESG issues and analysts cash flow forecast accuracy. Forecast accuracy is important to both investors and financial analysts. Prior research has shown that the capital market reacts more strongly to more accurate earnings forecasts than to less accurate ones (Gleason & Lee, 2003; Park & Stice, 2000). Forecast accuracy is also crucial to financial analysts themselves due to their careers and reputation concerns (Hong and Kubik 2003; Call, Chen, & Tong, 2009; Pandit, Willis, & Zhou, 2012).

Theoretically, the increased amount of disclosures should help analysts to forecast earnings and assess companies' future performance. Many studies that link analysts activities to CSR performance provide evidence that analysts use both financial information and non-

financial information in their forecasting tasks (Coram, Mock, and Monroe 2011; García-Meca and Martinez 2007; Ghosh and Wu 2012; Maines, Bartov, Fairfield, and Hirst 2002; Orens and Lybaert 2010; Simpson 2010; Pflugrath, Roebuck, and Simnett 2011; Zhou, Simnett, Green 2017). Lang and Lundholm (1996) argue that to the extent firm-provided information is transparent and informative, analysts forecast accuracy will improve. Andersen and Olsen (2012) and Shen and Chih (2005) show that CSR increase the transparency of accounting information prepared by management. Previous studies have found that CSR activities affect firm value (Jo and Harjoto, 2011), and CSR disclosures will be useful for analysts' forecasting. For example, Dhaliwal et al. (2011, 2012) find that firms with higher CSR ratings attract dedicated analyst coverage and analysts have lower earnings forecast errors and lower earnings forecasts dispersion for firms with positive CSR disclosure. Identifying four main aspects (accounting accuracy, stakeholder risk mitigation, corporate governance quality and overinvestment) of CSR, Becchetti et al. (2013) show that accounting accuracy, stakeholder risk mitigation, and corporate governance quality reduce the absolute earnings forecast error and its standard error while overinvestment in CSR strengths increases them. Their findings suggest that some components of CSR reduce information asymmetry. Prior literature studies also argue that CSR practices are value relevant and that firms with less social responsibility are characterized by less reputation, high risk, high information asymmetry, and non-transparent disclosures (Bhandari and Kohlbeck, 2018). Bhandari and Kohlbeck (2018) show that analyst following, and consensus analyst earnings forecast accuracy are related to the amount of CSR activities disclosed. Specially, they provide evidence that analyst following, and consensus forecast accuracy increase and that dispersion among consensus analyst forecasts and revision volatility decrease as the degree of CSR increases. These studies are consistent with the notion that CSR disclosures and CSR

performance help increase analysts' earnings forecast accuracy, however, none of these studies investigate forecast accuracy of an alternate performance metric – cash flow forecasts.

I argue that a firm's ESG issues disseminated by media affect analysts' decision-making process because media coverage reflects firms' ESG practices and performance. CSI coverage relies on a third-party evaluation, drawing public attention and increasing potential for stakeholder sanctions (Kolbel et al. 2017). Firms' actions are judged by external observers who assess whether these actions have negatively affected a stakeholder's legitimate claims and have strong incentives to highlight ESG issues that threaten their interests. ESG issues disseminated by the media to the public shall affect different capital market participants' perceptions about the reputation images and information environment of the firms, according to stakeholder theory. Media coverage captures negative information about ESG practices criticized by stakeholders, potentially reflecting negative CSR performance of firms. Eventually, media coverage of ESG issues may affect investors' perceptions about a firm's future performance as investors react more to negative than positive information in the market (Brown & Harlow, 1988). Focusing on the transparency of both positive and negative CSR performance, Cho et al. (2013) confirm that the influence of negative CSR performance is much stronger than that of positive CSR performance in reducing information asymmetry. Firms receive media coverage of ESG issues when stakeholders express serious criticisms on the ESG issues to the public and these ESG issues of the firm are reported by the media, such as environmental pollution, fraud, labor injustice or human rights violation. In addition, media coverage affects a firm's information environment (e.g., Tetlock et al., 2008; Fang and Peress, 2009; Engelberg and Parsons, 2011; Griffin et al., 2011; Dougal et al., 2012; Kim et al., 2014a) and reputation building process (Fombrun and Shanley, 1990; Cahan et al. 2015). What's more, Kolbel et al. (2017) find that

doing bad – in the form of receiving CSI coverage in the media, generate financial risk, providing necessary conditions that increase the potential for stakeholder sanctions. Their finding completes the theory about the risk-mitigating effect of CSR by demonstrating the risk-generating effect of CSI coverage (Kolbel et al. 2017). Financial risk used in Kolbel et al. (2018) study is the credit risk reflecting the expected downside volatility of earnings, given that uncertainty about a firm's earnings is increased and the firm's ability to repay debt on a timely manner is questioned.

I argue that if firms receive media coverage of criticism by stakeholders on ESG issues, their reputation would be immensely harmed as these issues are detrimental to firm disclosure quality, earnings persistence and growth. I posit that since media coverage of ESG issues can translate to financial risk, it should have value relevance to not only investors but also analysts. Credit risk is the downside risks borne by bondholders who have fixed claim against a firm's assets but who do not completely enjoy the firm's future profits (Fischer & Verrecchia, 1997; Plummer & Tse, 1999). Kolbel et al. (2017) suggest that media coverage of ESG issues reflect sustainability concerns about a firm's operations and its continuing viability. Debtholders may raise particular interest in this media coverage that reveal the downside risk. Given that bondholders are promised a set schedule of payments that critically depend upon a firm's ability to generate sufficient cash flow, I conjecture that these stakeholders are predisposed to be most interested in information related to assessing liquidity and solvency when they receive media coverage of ESG issues. This information is cash flow information which is a better than earnings for assessing the liquidity and solvency of a firm (DeFond & Hung, 2003; Graham, Harvery, & Rajgopal, 2005). I conjecture that when firms face high level of CSI coverage, investors are more likely to demand cash flow information in environments where earnings are

more likely to be manipulated due to uncertainty in future earnings and less likely to reflect true economic events. Cash flows are useful in complementing information in reported earnings and thus may help reduce the adverse effects of media coverage of ESG issues on earnings' usefulness (DeFond & Hung, 2003). Analysts who issue cash flow forecasts for firms that receive CSI coverage should respond to this demand by supplementing investors with not only additional cash flow information but also accurate cash flow forecasts, because analysts are information intermediaries with incentives to meet investors' demands for information (Bushman, Piotroski, & Smith, 2004; Lang, Lins, & Miller, 2004; Schipper, 1991).

One possibility is that analysts who follow firms with severe media coverage of ESG issues may generate less accurate cash flow forecast because they would engage in inferior communication and weak relationships with management who have integrity and ethical problems (Kim et al. 2012). These inferior communication and weak relationships with management may create more confusion and complexity in an analyst's assessment of firms' future performance. In addition, analysts have behavioral impediments in their inability to perceive the relevance of ESG factors on company's financial performance (BSR, 2008; Guyatt, 2005a, 2006a; Juravle & Lewis, 2008). For example, the use of accounting information such as financial reports or the use of standard financial valuation models such as discounted cash flow models to estimate the value of a company is widespread among investment agents (Barker, 1998; Previts, Bricker, Robinson, & Young, 1994). It is regarded as a conventional practice in evaluating companies' stocks. Some other activities as the collection and analysis of ESG information or the assessment of the impact of ESG factors on a company's financial performance are not conventional practices amongst mainstream analysts and professional investors (Campbell & Slack, 2011; Deegan, 1997; Milne & Chan, 1999; Jemel et al. 2011). The

studies by Guyatt (2005a, 2005b, 2006a) shows that internal and external conventional investment practices could impede fund managers ability to integrate ESG information into investment decisions. This research finds that short-termism and movement towards defensible investment decisions establish the main behavioral impediment to the integration of ESG dimensions by institutional investors. This finding was corroborated by recent studies (BSR, 2008; Campbell & Slack, 2011; Juravle & Lewis, 2008; McKinsey, 2009). Juravle and Lewis (2008) and Campbell and Slack (2011) confirm that internal investment institutions' conventions and culture do not incentivize analysts and investors to consider ESG information (Campbell & Slack, 2011; Juravle & Lewis, 2008). According to Campbell and Slack 2011, "a sell-side analyst's frame of reference is derived from the nature of their incentives and, to some extent, their institutionally-based cultural and ethical presuppositions". But, Davis et al. (2006) stated "analysts are usually poorly incentivized to move their analysis beyond the drivers of short-term performance" (Juravle and Lewis, 2008: 291). Thus, even if investors and analysts recognize that ESG factors can impact financial performance, they are still reluctant to use them because they estimate that their contributions are either too indirect to value creation or too long-term oriented compared to their normal investment horizon (BSR, 2008; Jaworski, 2007; McKinsey, 2009). In addition, CSI activities increase differences in opinion of different stakeholders and further obscure information environment (Cui et al. 2018), affect public perception of the firm's level of compliance and affect the probability distribution of its future cash flows (Attig et al. 2013; Shane and Spicer 1983), thereby increasing idiosyncratic risk (Herremans et al. 1993; Mishra and Modi, 2013; Lee and Faff 2009; Boutin-Dufresne and Savaria (2004).

Therefore, cash flow forecast accuracy may be inversely related with a firm's media coverage of ESG issues as higher level of media coverage may indicate that firms tend to

maintain weak relationships with analysts and have higher firm risk, thereby decreasing analyst cash flow forecast accuracy (Bhandari and Kohlbeck, 2016). This leads to the following hypothesis in the alternative form:

H2: A firm's media coverage of negative ESG issues is negatively related with the firm's analyst cash flow forecast accuracy.

3.2.3 Environmental and Social aspects of ESG and Analysts Cash Flow Forecasts

Prior literature has provided evidence that both social disclosure (e.g., Downing, 1997; Cormier et al., 2009a; Cormier et al., 2009b) and environmental disclosure (e.g., Cormier et al., 1993; Barth and McNichols, 1994; Li and McConomy, 1999; Aerts et al., 2008) provide value-relevant information to stock markets. This is important because financial reporting of a firm only conveys a partial account of business activities and ignores the environmental, social and governance impact made on the firm (Flower 2015). Whether ESG issues and activities can satisfy the informational needs of all stakeholders has become a critical concern as a number of companies disclosing their initiatives and performance with respect to ESG activities have grown (Bernadi and Stark 2018). Prior literature suggests the advantages of extensive and objective environmental and social disclosures are observable as they improve a firm's stock price and enhance firm reputation (Qiu et al. 2016; Li et al. 2018). For example, these advantages can manifest in the form of higher sales, lower transaction costs and lower firm monitoring costs (Cormier et al., 2011; Stulz,1999). Qiu et al. (2016) find that the positive relationship between firms' social disclosures and market value is driven by higher expected growth rates in the cash flows of such firms (Clarkson, Guedes, & Thompson, 1996), suggesting that social disclosures help firms reap real economic benefits.

There are a number of studies that explore the usefulness of environmental and social disclosures to certain actual or potential users of business communications (e.g., Benjamin and Stanga 1977; Teoh and Shui 1990, Milne and Chan 1999, Deegan 2004, Solomon and Solomon 2006, Thompson and Cowton 2004). Fieseler (2011) highlights that equity analysts perceive environmental sustainability as long-run value-enhancing activity and emphasizes firms' environmental irresponsible actions. Nichols and Wieland (2009) show that the information intermediary role of financial analysts is more important when firms issue product-related non-financial information, which are closely related to firms' sales and future cash flows. Campbell and Slack (2011) contributes to this literature and to understanding of the decision-usefulness of environmental disclosures to sell-side bank analysts as a specific capital market participant.

Adhikari (2014) suggest that the information role of financial analysts and resulting external monitoring tend to be an important driving force in mitigating firms' irresponsible behaviors. Dong et al. (2015)'s findings confirm that environmental sustainability and product quality and safety tend to be emphasized more by equity analysts. They show that financial analysts emphasize different dimensions in firms' ESG performance. ESG analysis involves meeting the needs of all stakeholders and take into account the environmental, social and governance dimensions of a firm's actions or initiatives and should be examined more precisely by separating CSR-related actions into two broad categories, social-related and environmental-related (Cormier and Magnan 2011). Cormier and Magnan (2011) argue that information about a business decision may lead to contrasting interpretations about their social and environmental implications. Building upon the intuition of Neu et al. (1998) who treat social disclosure as a determinant of environmental disclosure, Cormier and Magnan (2011) suggest that social and

environmental disclosures substitute each other in reducing the information asymmetry between a firm's managers and its stock market participants.

Focusing on the sample of firms over the period 2008 to 2012 in South Africa where integrated reporting (IR)[4] is mandated, Bernardi and Stark (2018) examine the impact of the reporting regime change in South Africa on analyst forecast accuracy as a way of evaluating users' perceptions of the usefulness of IR. They find that any effects of IR will be greater the greater is the level of disclosures of environmental, social and governance performance and the level of environmental, social and governance disclosures is a mediating variable in determining the effectiveness of IR. These findings support the assumption that a link between ESG-related disclosures and analyst forecast accuracy will only exist if a link between ESG performance and future financial performance for South African listed companies is justified. Bernardi and Stark (2018)'s findings suggest the importance and usefulness of integrating adequate ESG disclosures into IR provide more useful information that help enhance the understanding of a firm's future to capital markets users.

Kolbel et al. (2017) find that negative media articles regarding ESG issues increase a firm's credit risk. They argue that stakeholder sanction is the common reaction to media coverage of ESG issues of a firm, leading to many forms of stakeholder pressures such as boycotts, protest and sabotage and eventually will hurt the firm's earnings and increase credit risk. At the same time, analysts forecast operating cash flow help investors assess solvency and viability (DeFond & Hung, 2003; McInnis & Collins, 2011). Media coverage of ESG issues may

[4] the International Integrated Reporting Council (IIRC) formed in 2010 issued its first Discussion Paper on IR in 2011. The Discussion Paper aimed to '... meet the needs of the 21st century' by building '... on the foundations of financial, management commentary, governance and remuneration, and sustainability reporting in a way that reflects their interdependence' (IIRC 2011, p.1). The IIRC published an IR Framework in December 2013 (IIRC, 2013), stating that an integrated report is '... a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term' (IIRC, 2013, p.7, paragraph 1.1).

also signal that broken trust and cooperation with stakeholder groups can bring significant troubles in the form of higher cash flow shock when stakeholder sanctions occurs (Cooper, 2006; Godfrey, Merrill, & Hansen, 2009). I argue that since media coverage of ESG issues provides visible and salient information about a firm's future earnings due to potential stakeholder sanctions to the market, the separate aspects of CSI coverage should help analysts better assess the firm's future earnings and cash flows and thus improve their ability to forecast cash flows to meet the information need of investors on operating cash flow and solvency. Therefore, I hypothesize the following in the alternative form:

H3: A firm's media coverage of environmental issues, social issues or governance issues is positively related with the firm's analyst cash flow forecast accuracy.

3.2.4 Media coverage of ESG issues and Investors

Investors have imperfect information about the firms they invest (Greenwald and Stiglitz 1990). This makes the role of external information providers such as RepRisk AG more salient as they provide new information about firm ESG performance and communicate to investors (Ramchander et al. 2012). Recent surveys (e.g., CICA 2010; Cohen et al. 2011) show that investors consider the third-party CSR performance ratings as an important source through public and/or private channels and use them to evaluate a firm's CSR performance for investing decisions.

Prior research has shown that both financial (Botosan, 1997, 2006; Hail and Leuz, 2006; Francis et al., 2005) and nonfinancial disclosures (Dhaliwal et al., 2011, 2014) decrease the cost of equity capital. Increased CSR disclosures are indicative of better risk management (Godfrey et al., 2009), capture investor willingness to pay a premium for firms that are socially responsible

(Richardson & Welker, 2001), or is a response to social preferences in consumer behavior (Lev, Petrovits, & Radhakrishnan, 2010), hence contributing to the reductions in a firm's cost of capital. A reduced firm-specific risk may explain the relation between positive CSR disclosures and/or performance and lower cost of equity (Dhaliwal et al. 2014). Disclosures can reduce non-diversifiable risks and thus the cost of capital through different mechanisms (Dhaliwal et al. 2014) such as lower estimation risk and parameter uncertainty in asset pricing models used by investors (Barry and Brown, 1985; Coles et al., 1995; Lambert et al., 2007), lower monitoring cost shared by investors and lower rate of return for holding stocks (Lombardo and Pagano, 2002), and enhanced risk sharing due to improved investor recognition(Merton, 1987; Lombardo and Pagano, 2002).

Prior literature also shows that information quality affects the cost of equity capital through liquidity risk (Sadka 2006; Ng 2011). Chen et al. (2017) examine a liquidity risk-based channel through which accounting quality affects the post-earnings-announcement drift (PEAD). PEAD reflects investors' underreaction to earnings news and is viewed as one of the major accounting-based anomalies (Chen et al. 2017). They explain how PEAD returns might be viewed as compensation to investors for bearing liquidity risk and pay particular attention to the role of accounting quality in explaining PEAD through liquidity risk. Chen et al. (2017)'s focus on the accounting component of liquidity risk is motivated by the recent evidence that liquidity risk is an important systematic risk (Pastor and Stambaugh 2003; Liu 2006; Sadka 2006) and earnings quality is negatively associated with liquidity risk (Ng 2011). They show that accounting-associated liquidity risk plays a more important role than its nonaccounting-associated counterpart in explaining one of the important accounting-based anomalies. The question now arises about whether there is a link between media coverage of ESG issues and

accounting-related liquidity risk. Kolbel et al. (2017) find that media coverage of ESG issues increases financial risk, suggesting that these media coverage may affect direct cash flow consequences, altering the firm's ratio of the future cash flows to the covariance with all the cash flows in the market, i.e., the liquidity risk. This channel is supported by Lambert et al. (2007) who show that accounting information quality can influence cost of capital either directly through the firm's assessed covariance with other firms' cash flows or indirectly through the firm's expected cash flows. Lambert et al. (2007) develop a model, based on the Capital Asset Pricing Model (CAPM), in which information quality affects the cost of equity via an impact on systematic risk, specified as the (unobservable) forward-looking beta. They show that high quality disclosure can directly reduce the cost of capital by lowing the degree of covariance between a firm's cash flows and that of the market. Lambert et al. (2007) show that in a perfect competition setting, the average precision of investors' assessments of firms' future cash flows directly affects the cost of equity. Their model suggests that providing additional CSR-related information to investors increases the average level of information precision, thus directly affecting investors' assessments of firms' future cash flows and the cost of equity. Lambert et al. (2007) imply that there is an indirect link from accounting information quality to the cost of equity that is mediated by information asymmetry, provided the capital market is not perfectly competitive (Bhattacharya et al. 2012). In equity markets, adverse selection and uncertainty concerns induce traders and market makers to price-protect themselves and reduce their willingness to trade (Barry & Brown, 1986; Copeland & Galai, 1983; Merton, 1987). If their willingness to trade reduces, market liquidity drops. Transaction costs increase when liquidity decreases (Amihud, 2002; Amihud & Mendelson, 1986), leading to increases in the cost of equity capital (Verrecchia, 2001).

Insufficient disclosures increase information asymmetry because it creates space for asymmetric information (Egginton and McBrayer, 2018). Existing literature on disclosure suggests that more transparent disclosure practices reduce information asymmetry, thereby improving market liquidity and reducing transaction costs (Diamond & Verrechia, 1991; Welker, 1995). Graham et al. (2005)'s survey results suggest that voluntary disclosure is important for managers who seek to reduce their cost of capital. Dhaliwal et al. (2011) and Reverte (2012) provide empirical evidence that CSR disclosure transparency reduces cost of equity capital. Dhaliwal et al. (2011) argue that this outcome applies to both mandatory and voluntary disclosure as long as the disclosure is value-relevant. Prior studies suggest that corporate CSR disclosure is one important type of value-relevant, voluntary disclosure (Al-Tuwaijri, Christensen, & Hughes, 2004; Arrive & Feng, 2018; Kaymak & Bektas, 2017; Orlitzky, Schmidt, & Rynes, 2003). I examine the degree to which third-party CSR information may act to reduce information asymmetry by studying how equity markets respond to media coverage of ESG issues. Specifically, If media coverage of ESG issues generally captures additional high quality non-financial information that is value-relevant to investors about firms' future earnings and cash flows and thus provides benefits to investors by reducing information asymmetry in the equity market, then the next question is how do investors in the equity market react when they receive negative information about a firm's ESG issues covered by the media?

Inspired by Lambert et al. (2007)'s theoretical work on the effect of information quality on the liquidity risk and Chen et al. (2017)'s particular attention to the role of accounting quality in explaining one accounting anomaly through liquidity risk, I investigate the relation between media coverage of ESG issues and accounting-related liquidity risk. Media coverage of ESG issues demonstrates the risk-generating effect of CSI coverage through potential for stakeholder

sanctions, which may result in expectations of lower earnings and cash flows, thereby increasing financial risks (Kolbel et al. 2017). To the extent managers are more (less) likely to truthfully provide relevant stakeholders with firm information, CSR performance can indicate disclosure quality (see Kim et al. 2012). Firms who are exposed to these media coverage of ESG issues may provide less credible and less transparent disclosure to protect against further negative consequences. Firms with poorer accounting quality due to less credible and transparent disclosures may exhibit higher accounting-related liquidity risk (see Lambert et al. 2007; Chen et al. 2017) due to increased information asymmetry. The substantial effect of information quality on cost of capital through liquidity risk due to media coverage of ESG issues may be significant.

As an important systematic risk, liquidity risk is defined as a stock's return sensitivity to unexpected changes in aggregate or market liquidity (Pastor and Stambaugh 2003), capturing the degree of gain or loss to investors as market liquidity changes (Ng 2011). Empirical evidence supported the pricing of liquidity risk such as Pastor and Stambaugh (2003), Acharya and Pedersen (2005), and Sadka (2006). Pastor and Stambaugh (2003) integrate their concept of liquidity into empirical tests by estimating the correlation of a firm's stock return to aggregate liquidity (liquidity beta). Acharya and Pedersen (2005) further address four possible types of systematic risk between the firm and the market in return and liquidity. Several studies explain the difference between liquidity risk and market liquidity (Acharya and Pedersen 2005; Korajczyk and Sadka 2008; Sadka 2011; Watanabe and Watanabe 2008). Furthermore, the liquidity risk and market liquidity are different concepts (Acharya and Pedersen, 2005; Korajczyk and Sadka, 2008; Lou and Sadka,2010). The liquidity risk of a particular stock is defined as the stock return sensitivity to unexpected changes in market liquidity, however, stock market liquidity refers to the ability to trade large quantities of stocks quickly and efficiently, at

low cost, and without moving the stock price. In my dissertation, I follow Ng (2011) definition of liquidity risk of a stock that refers to the sensitivity of the stock's return to unexpected changes in market liquidity. Following Chen et al. (2017), I look at accounting-related liquidity risk which is closely associated with accounting information quality (i.e., earnings quality).

The relevant macroeconomic condition for liquidity risk is market liquidity. Market liquidity reflects the ability to trade large quantities of stocks quickly, at low cost, and without moving the price at the aggregated market level (Pastor and Stambaugh, 2003). The information environment of a stock is an important determinant of the stock liquidity (Healy & Palepu, 2001; Ravi & Hong, 2014). Prior studies document information asymmetries in markets wherein different information sets enable sophisticated or informed investors to outperform relatively uninformed investors (Grossman & Stiglitz, 1980; Hellwig, 1980; Kyle, 1985). Market makers and other market participants lose when trading with information motivated traders. Market makers and other market participants respond to changes in information asymmetry by adjusting bid-ask spreads (Easley & O'Hara, 1987; Glosten & Harris, 1988). A decrease in market liquidity typically reflects a macroeconomic condition in which there is investor and market maker outflow from the equity markets among high market volatility and risk aversion (e.g., Chordia et al., 2000; Pastor and Stambaugh, 2003; Acharya and Pedersen, 2005; Brunnermeier and Pedersen, 2009). When market liquidity decreases, different stocks will experience different degrees of investor and market maker outflow because investors and market makers have different concerns about uncertainty in future returns and adverse selection. Ng (2011) argue that when market liquidity changes, information quality associated with stock contribute to levels of investors and market maker' outflow or inflow from the equity market as investor demand for the stocks is associated with uncertainty and adverse selection. Focusing on ordinary shares of stocks

listed on NYSE, AMEX, or NASDAQ from January 1983 to December 2008, Ng (2011) find that higher information quality is associated with lower liquidity risk which in turn lowers cost of capital. Ng's finding suggests that stocks that are subject to greater information asymmetry are more sensitive to large unexpected market liquidity changes.

There is widespread evidence that more enhanced and transparent disclosures are beneficial, in terms of improving firm value (Healy et al., 1999; Gelb and Zarowin, 2002; Starks 2009) and stock market liquidity (Welker, 1995; Healy et al., 1999; Leuz and Verrecchia, 2000) because these disclosures reduce information asymmetry among investors and between managers and investors. Cho et al. (2013) find that both positive and negative CSR performance reduce information asymmetry by providing useful information to the market. My dissertation focuses on third-party disclosures by media that disseminates negative ESG information of a firm to the market. I posit that media coverage of ESG issues may reflect accounting quality (i.e., earnings quality) of a firm because this information affects information asymmetry between firms and stakeholders including investors (Cho et al. 2013). These media coverage of ESG issues provide credible information available to public and should be captured by the market. The question is whether media coverage of ESG issues reduces or increases information asymmetry between firms and investors.

If media coverage of ESG issues provide useful and salient information to investors about firms' future financial performance and value in general, information asymmetry should be reduced and investors should be responsive to these media coverage in the liquidity risk of stocks of the firms that exhibit different level of media coverage of ESG issues. Tadros and Magnan (2019) provide evidence that compared to high performers, low performers disclose more proprietary information that has a direct effect on cash flows and these firms disclose less

nonproprietary information in response to higher level of threats to legitimacy of their operations. More proprietary disclosures help reduce information asymmetry between firms and stakeholders (e.g., Healy et al., 1999; Gelb and Zarowin, 2002; Starks 2009) and help investors assess firms' future performance and value. I conjecture that firms that receive higher level of CSI coverage disclose more proprietary information and more negative information than those who receive lower CSI coverage in response to higher level of threats from stakeholders. Tadros and Magnan (2019) also show that low performers are willing to disclose more negative information than the high performers, suggesting that low performers may not try to legitimate their actions or create a favorable reputation. This additional proprietary information that have a direct effect on cash flows may help investors make better assessment of the firms' future performance, thereby affecting the liquidity risk. In addition, Herremans et al. (1993) and Mishra and Modi (2013) suggest that negative CSR disclosures increase idiosyncratic return volatility and positive CSR disclosures reduce idiosyncratic risk. Oikonomou et al. (2012) find that CSI is positively and strongly associated with systematic risk. Bae et al. (2018) find that CSR concerns increase firm risk and thus increase the loan spread, suggesting that CSR matters in the pricing of loan contracts beyond credit rating information. They show that beside credit risk, liquidity risk, and maturity risk, creditors charge higher risk premium on a corporate debt instrument in the form of the credit spread for firms without or with CSR engagement. If CSI coverage, as a risk generator, reflects a firm's poor CSR engagement, investors may expect higher compensation for liquidity risks that investors bears relative to the risk-free investment. These studies suggest that higher CSI coverage will be associated with higher liquidity risk.

Ethics and integrity are an integral element of the COSO Enterprise Risk Management framework, and ethics and risk management are correlated and have empirical support (Francis

and Armstrong 2003; Godfrey 2005; Power 2004;2009). Ethics and integrity are reflected by corporations' values and actions on how they tackle with ESG issues raised by their stakeholders. Firms with a culture of integrity maintain healthy relations with all stakeholders, build trust and cooperate with them and thus face lower transaction costs when dealing with stakeholders. Outside investors including creditors may be more likely to provide capital to firms with integrity-focused cultures (Hsu 2007). The media coverage of CSI provides a critical condition for stakeholder sanctions to take place against a particular firm as the media coverage that identifies those actions as CSI is important to capture stakeholders' attention towards the irresponsible actions (Lange and Washburn 2012). Jiang et al. (2019) suggest that firms without an integrity-focused culture have higher investment-cash flow sensitivity and face higher transaction costs as these firms have more difficulties getting capital from outside investors including creditors. They argue that corporate integrity help firms improve their access to capital markets by reducing market imperfections and frictions and thus reduces the need to hoard cash to finance investments. I posit that firms that receive CSI coverage may have more integrity-related issues in their corporate culture and are less likely to be perceived by external stakeholders, including creditors, to honor contracts, adhere to regulations and respect the interests of stakeholders (Jiang et al. 2019). These investors of these firms may be more sensitive to cash flows than investment in other firms due to the higher agency costs (e.g., Pawlina and Renneboog 2005; Attig et al. 2012, 2013) and they may have lower incentive to over-invest with external capital (Jiang et al. 2019). When the market performs badly, investors may be willing to compensate more for higher liquidity risk as transactions costs and investment-cash flow sensitivity in these firms would be higher.

Prior research also documents that poor earnings quality is associated with higher information asymmetry (e.g., Bhattacharya et al. 2009) and with higher systematic risk (e.g., Francis et al. 2005, Barth et al. 2013). For instance, Bhattacharya et al. (2012) show that poor earnings quality represents imprecise information about firms' future cash flows and thus increases the cost of equity capital. Accounting-related liquidity risk is one of the systematic risks. If CSI coverage strongly signals a firm's poorer earnings quality, these firms may provide more positive but opportunistic earnings disclosure, blurring investors' assessment of the firm's true future performance. Poorer earnings quality of these firms reduces the firms' transparency, which, in turn, should increase information asymmetry (e.g., Diamond and Verrecchia, 1991; Lambert et al., 2007) and increase accounting-related liquidity risk of these firms. This suggests that CSI coverage may be positively associated with accounting-related liquidity risk. Therefore, I provide the hypothesis in the alternative form in the following:

H4a: A firm's media coverage of negative ESG issues is positively related with accounting-related liquidity risk.

3.2.4.1 Media coverage of ESG issues, Analyst Cash Flow Forecasts and Investors

After examining whether there is a link between CSI and accounting-related liquidity risk, the second question is what the role of analyst cash flow forecasts in the relation between media coverage of ESG issues and liquidity risk. I posit that analysts cash flow forecasts may NOT play a role in relation between media coverage of ESG issues and accounting-related liquidity risk.

Chen, Lobo and Zhang (2017) find that accounting-associated liquidity risk and the post-earnings-announcement drift is weaker for firms with greater analyst following, consistent with

the notion that analysts play an effective intermediary role in reducing the importance of accounting information. Analysts play a role as information intermediaries who help expand investor attention and are considered as a monitoring agent that helps reduce agency costs (Jo and Harjoto, 2014) and maintain that analyst coverage imposes discipline and restrictions on managers who have incentives to misbehave. Analysts also play an important information-production role, detecting any financial reporting irregularities. Analyst monitoring also helps align managers incentives with shareholders incentives, hence analyst monitoring helps increase managers incentives to implement more optimal policies (Jo and Harjoto, 2014). A survey of financial analysts indicates that cash flow forecasts are important in firm valuation (Block, 1999). There is evidence that a large portion of the investment community relies more on cash flows than earnings in the decision-making processes (FASB, 1978; Golub and Huffman, 1984; Call, 2008). Prior literature documents that analyst cash flow forecasts provide useful information incremental to earnings forecasts and these cash flow forecasts can also serve as a disciplining mechanism of managers' financial reporting behavior when accompanied with earnings forecasts because of the implicit information contained about accruals (e.g., McInnis and Collins 2011; Call, Chen, and Tong 2009; Call et al. 2013a). Call et al. (2013a) conclude that cash flow forecasts are useful to investors in the investment decision process. Jung (2015) provides evidence that analysts who issue cash flow forecast along with earnings forecasts results in a reduced cost of equity capital, reduce information asymmetry and predict long-term earnings more accurately than those who issue only earnings forecasts, suggesting that cash flow forecasts provide high-quality information to market participants. Recent literature on cash flow forecasts show that cash flow forecasts provide investors and other stakeholders with more information than earnings forecasts alone, resulting in better external monitoring of firms'

financial reporting disclosures (e.g., Jung 2015; Mao and Yu 2015). These studies indicate that cash flow forecasts to some extent reduce information asymmetry of firms who suffer from poor disclosure quality or earnings quality. Mao and Yu (2015) examine the economic implications of the issuance of analysts' cash flow forecasts using auditors' responses and firm disclosures on internal control. Specifically, Mao and Yu (2015) find evidence of lower audit fees and smaller audit lags and a significantly lower probability of ICW disclosures for firms after the initiation of cash flow forecasts. These findings suggest that cash flow forecasts constrain earnings manipulation and improve management accounting behavior and therefore reduce auditor inherent and control risk and improve firms' internal control over financial reporting. All these studies suggest that analyst cash flow forecast play a role in attenuating the relationship between firm's media coverage of ESG issues and accounting-related liquidity risk.

However, reduced information asymmetry due to the supply of media coverage of ESG issues as additional information available to public can reduce the importance of the role of analysts in capital markets (Lee et al. 2018). In this case, analysts' services may be less demanded by investors with greater supply of ESG information, and analysts may not be more willing to produce cash flow forecasts. In addition, analysts may not produce accurate cash flow forecasts for firms who receive media coverage of ESG issues and investors because they would engage in inferior communication and weak relationships with management who have integrity and ethical problems. These inferior communication and weak relationships with management may create more confusion and complexity in an analyst's assessment of firms' future performance. In addition, analysts have behavioral impediments in their inability to perceive the relevance of ESG factors on company's financial performance (BSR, 2008; Guyatt, 2005a, 2006a; Juravle & Lewis, 2008). One impediment is the dissatisfaction of investment

professionals with the quality of ESG information. Another impediment is the difficulty of identifying and measuring ESG indicators and drivers, the cost of collecting and managing information in a timely manner (Adams et al. 2011).

Several studies suggest that the stock market does not fully incorporate the information of analysts' earnings forecasts and recommendations (e.g., Givoly and Lakonishok, 1979; Gleason and Lee, 2003; Ramnath et al., 2008; Womack, 1996). Lin, Reichelt and Sun (2018) find that macroeconomic variables can predict aggregate analyst earnings forecast errors, suggesting that analysts do not fully take into account macroeconomic influences on individual firms' earnings in their forecasts, and that systematic biases in market expectations exist. It is possible that analysts and investors utilize different information and form different expectations about individual firms' fundamentals when analyst earnings forecasts only reflect part of the information in security prices (Lin et al. 2018). Therefore, it is not known whether analyst cash flow forecasts can attenuate the relation between media coverage of ESG issues and accounting-related liquidity risk. Therefore, I generate the non-directional hypothesis in the following:
H4b: Analysts cash flow forecasts for a firm does not affect the relation between the firm's media coverage of negative ESG issues and accounting-related liquidity risk.

3.3 Methodology

3.3.1 ESG Risks Measurement

RepRisk is a global research and business intelligence provider on ESG risks. RepRisk uses a proprietary algorithm to calculate the index based on the identified issues, the severity of the issues, the reach of media sources, and the frequency and timing of information. RepRisk systematically screens a wide range of news (i.e., international and local newspapers, online

news and newswires, blogs, social media, world-wide web, non-governmental organizations, governmental agencies), stakeholder and other third-party sources in fifteen languages on a daily basis and identify news items that criticize firms' practices in ESG dimensions.

RepRisk AG uses 28 ESG issues to guide its search methodology and these issues are organized into five categories: environmental footprint, community relations, employee relations, corporate governance, and general issues (Kolbel et al. 2017). Issues in the last category is in conjunction with the issues from other four categories. Please see the 28 issues listed in Appendix I. This scope of pre-defined 28 issues was in accordance with international standards and norms, including the UN Global Compact's Ten Principles, the Universal Declaration of Human Rights, the Conventions of the International Labour Organization (ILO), the UN Convention against Corruption, the World Bank Environmental, Health, and Safety Guidelines, and the Organization for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises (Kolbel et al. 2017). Automated search algorithms screen over 80,000 public sources for news items and articles that criticize a specific firm for one of the ESG issues within the scope. Trained analysts then read and summarize the news item and put it into the database, linking it to the firm being criticized, the stakeholder who reported criticism, and to the issues to which the criticism related. RepRisk does not consider the truthfulness of allegations and accusations but only what media and external stakeholders report (Kölbel et al. 2017).

RepRisk database has been used by 100 global financial and corporate clients for risk management, compliance, supply chain, as well as supervision of reputation, peers, NGOs and ESG issues. ESG risks assessed by RepRisk are widely used by financial institutions, corporations, and regulatory organizations. I believe that ESG risks can translate into bottom-line impact because these risks reflect a corporation's actions towards critical social issues including

environmental degradation, human rights abuses, corruption and fraud. These actions have great impact on compliance risks, reputation risks, and financial risks. With daily updates, universal coverage, and adverse information on companies, projects, sectors, and countries, ESG risks measured by RepRisk, capture increased and rapidly changing stakeholder expectations towards ESG issues and leveraging stakeholder information supports transparency and informed decision-making. Due to the RepRisk's primary focus on the internet and social media and stakeholders' information, ESG risks measured by RepRisk reflect a highly transparent and connected world, which serves to increase stakeholders' expectations about ESG issues. Therefore, taking an external perspective on company operations, ESG risks provides valuable third-party stakeholders' information which can give insights into corporate' operations and can act as an early warning system, which can be perceived a reality check about corporate social performance.

I use the basic dataset of the RepRisk database for my dissertation. The basic dataset covers all publicly traded companies that have been exposed to environmental, social and governance (ESG) risks (i.e., approximately 11,000 companies from all sectors and geographies). I use the RepRisk Index (RRI) data from the basic dataset to obtain the indices for corporate reputational risk related to ESG risk issues. The RRI data has the company's ESG-related reputation risk metric and RepRisk Rating on a monthly basis including a breakdown of E, S and G. A company's RRI score ranges from the lowest of zero to the highest of 100. The higher the RRI score, the higher the level of criticism received and borne by a firm and thus higher the ESG risks. Firms with the index between 76 and 100 have very high-risk exposure, firms with the index between 51 and 75 have high risk exposure, the index between 26 and 50 indicates median risk exposure, and the index below 25 are low risk exposure firms. RepRisk Rating combines

both the reputational risk exposure of the company and the country-sector ESG risk exposure of the company, ranging from AAA (low ESG risk exposure) to D (very high ESG risk exposure).

I use three RRI indices for my dissertation: Current RRI, Peak RRI and RRI trend. A current RRI indicates the media and stakeholder exposure of a company at the current time, and a Peak RRI shows an overall risk indicator for the highest level of assessment over the past two years received by a company. RRI trend captures the change in the RRI within the past 30 days. The RRI allows a company to compare its exposure with that of its peers and facilitates an initial assessment of the ESG risks associated with financing, investing and other activities with a particular company and help capture risk trends over time (RepRisk Institute 2015). Each of the RRI indices is used for main regression models to test my hypotheses.

I also use the RepRisk Issue (ESG Issue) data from the basic dataset to obtain the name of the issues, count of links for the given issues, the severity of the risk incident or news and the source reach (influence) in which the risk incident was published. The ESG Issue data covers a company's RepRisk's ESG issues on a monthly basis. The source reach is the influence or readership of the source in which the risk incident was published, ranging from 1 (low reach source) to 3 (high reach source). The severity of the risk incident or news has three levels (low, median, and high) including a news count that reflects the number of incidents given the respective severity score that month. The severity is determined on the consequences of the risk incident, the extent of the risk incident, and whether the risk incident was caused by an accident, by negligence, or intent, or in a systematic way.

3.3.2 Data sources

The data sources used for main regression models are Audit Analytics, Compustat, CRSP, Execucomp, I/B/E/S, Institutional Shareholder Services and RepRisk database. RepRisk database has company names and the companies' unique REPRISK_ID identifiers so I manually match the company names from RepRisk database with those of Compustat database with GVKEY identifiers. After matching, there are total of 2583 firms.

3.3.3 Issuance of Cash Flow Forecasts

Following Kim et al. (2015), I use a logit model to examine the relation between media coverage of negative ESG issues of a firm and analyst's decision to issue a cash flow forecast for the firm. In hypothesis H1, I predict that a firm's media coverage of negative ESG issues is positively related with the likelihood of being issued analysts cash flow forecasts. I estimate the following logistic regression model where year and industry fixed effects are included and the standard errors are heteroscedasticity-consistent to test H1:

$$P(DCF)_{it} = \alpha_0 + \alpha_1 ESG\_INDEX_{\ it} + \alpha_2 CFO\_VOL_{it} + \alpha_3 CFO_{it} + \alpha_4 ABS\_ACCRUAL + \alpha_5 CAP\_INT_{it} + \alpha_6 ALTMAN\_Z_{it} + \alpha_7 SIZE_{it} + \alpha_8\, ANALYST\_FOLLOWING_{it} + \alpha_9 BM_{it} + \alpha_{10}\, AGE_{it} + \alpha_{11} DLOSS_{it} + \alpha_{12}\, FIN\_CRISIS_{it} + \alpha_{13}\, YEAR\_DUMMIES + \alpha_{14} INDUSTRY\_DUMMIES + \varepsilon_{it} \quad (1)$$

where *DCF* is an indicator variable that is valued one if at least one quarter cash flow forecast issued by analysts during the fiscal quarter, and zero otherwise. As the independent variable of interest, ESG risks variable is one of the three RRI indices for my study: Current RRI, Peak RRI and RRI trend. The explanatory variables except ESG risk variable in the model above include firm characteristics that impact the forecasting difficulty and investor demand for

cash flow forecasts. The significant and negative coefficient estimate α_1 will indicate that a firm's media coverage of negative ESG issues is negatively related with the likelihood of being issued analysts cash flow forecasts, consistent with the prediction in H1.

I control for the factors that would affect analysts' incentive to issue cash flow forecasts. The first control variable is a proxy for future cash flow uncertainty (*CFO_VOL*), measured as the firm-specific standard deviation of prior three year's operating cash flows divided by lagged assets. This standard deviation measure captures cash flow volatility. Higher cash flow volatility increases the difficulty analysts has when forecasting cash flows and the difficulty decreases analysts' propensity to issue cash flow forecasts. I control operating cash flows divided by average assets (*CFO*), which is a proxy for degree of the liquidity constraint. I expect $\alpha 2$ to be negative and $\alpha 3$ to be positive, suggesting that when the uncertainty about cash flows is higher and when the liquidity constraint is more severe, the probability of analysts issuing cash flow forecasts is higher. Following prior literature (e.g., DeFond and Hung, 2003), I control for the determinants of *equity* analysts' provision of a cash flow forecast. The control variables are (1) absolute accruals (*ABS_ACCRUAL*), and (2) capital intensity (*CAP_INT*), and (3) financial health (*ALTMAN_Z*). *ABS_ACCRUAL* is defined as the absolute value of earnings before extraordinary items minus operating cash flows divided by average assets. *CAP_INT* is gross property, plant, and equipment divided by average assets. I employ the Altman Z-score (ALTMAN_Z) to measure the firm's financial health. Investors may rely more on cash flow forecasts to assess a firm's ability to fulfill its financial obligations when risk of financial distress is high. I predict a negative relation between Altman Z-score and the likelihood of issuing cash flow forecasts. According to Altman (1968), *ALTMAN_Z* = 1.2 (net working capital / total assets) + 1.4 (retained earnings / total assets) + 3.3 (earnings before interest and taxes / total

assets) + 0.6 (market value of equity / book value of liabilities) + 1.0 (sales / total assets). Consistent with DeFond and Hung (2003), $\alpha 4$ and $\alpha 5$ are expected to be *positive*, while $\alpha 6$ is expected to be *negative*.

Bilinski (2014) argues that a richer information environment should decrease the cost of generating cash flow forecasts, increasing the likelihood an analyst will issue the cash flow forecast. However, he argues that a richer information environment may also decrease investor demand for cash flow forecasts if investors can use other information sources to better understand the information in earnings than analyst cash flow estimates. I control for a firm's information environment by using firm market capitalization (SIZE) and the number of analysts following a company (ANALYST_FOLLOWING). High uncertainty about cash flow can increase investor demand for analyst cash flow forecasts and a richer information environment reduce uncertainty. Therefore, I include *SIZE*, measured as the natural logarithm of one plus the equity market capitalization, to control for firm risk and information environment. I expect a positive relationship between SIZE and the propensity to issue analyst cash flow forecasts. I control for the book-to-market (*BM*) ratio as cash flow forecasts may be more valuable in assessing earnings quality of high growth firms. Younger firms with financial information of shorter time-series may make it more difficult for analysts to forecast cash flows, which is likely to reduce the analyst propensity to jointly issue cash flow and earnings forecasts. However, investor may demand cash flow forecasts more for younger firms. I measure firm age (*AGE*) as the number of years between the last date of the prior fiscal year and the first time the firm is included in CRSP database. I control for loss-generating firms (*DLOSS*) as analyst cash flow forecasts may help assess performance of companies that generate losses (Burgstahler and Dichev, 1997; and Collins et al., 1997). I predict a positive relation between loss-generating firm

indicator and the likelihood of issuing cash flow forecasts. I include an indicator for the recent financial-crisis period (*FIN_CRISIS*) as cash flow forecasts may have been more valuable to investors in assessing firm performance during this period. I predict a positive relation between financial-crisis indicator and the likelihood of issuing cash flow forecasts. Year dummies (*YEAR_DUMMIES*) and industry dummies (*INDUSTRY_DUMMIES*) are based on 2-digit I/B/E/S SIC codes control for year- and industry-effects. Year dummies are for the EPS forecast issue year. All continuous variables in the regression are winsorised at the 1 percentile and 99 percentiles to remove potential outliers. I provide detailed definitions of these variables in Appendix II.

3.3.4 Cash Flow Forecast Accuracy

The following is the regression specification to examine the impact of a firm's exposure to ESG risk on cash flow forecast accuracy. In hypothesis H2, I predict that a firm's media coverage of negative ESG issues is not related with the firm's analyst cash flow forecast accuracy. I estimate the following regression model where year and industry fixed effects are included, and standard errors are heteroscedasticity-consistent on a sample of firm-quarter observations for firms to test H2:

$$CFFA_{it} = \alpha_0 + \alpha_1 ESG\_INDEX_{it} + \alpha_2 BM_{it} + \alpha_3 CFO\_VOL_{it} + \alpha_4 CFO_{it} + \alpha_5 HORIZON_{it} + \alpha_6 LEV_{it} + \alpha_7 SIZE_{it} + \alpha_8 YEAR\_DUMMIES + \alpha_9 INDUSTRY\_DUMMIES + \varepsilon_{it} \quad (2)$$

Where CFFA variable is cash flow forecast accuracy for firm j in the specified fiscal period t, measured by the absolute cash flow forecast error (CFCRROR). CFCRROR is the absolute value of the difference between the actual cash flow per share and mean consensus

forecasted cash flows per share for firm i in the fiscal period t. I use quarterly cash flow forecasts. Following Bhandari and Kohlbeck (2018), I multiply CFCRROR by negative one. Therefore, larger value of CFFA indicates higher accuracy of analyst cash flow forecasts. The significant and negative coefficient estimate α_1 will indicate that a firm's media coverage of ESG issues is negatively related with the firm's analyst cash flow forecast accuracy, supporting the prediction in H2.

The accuracy of cash flow forecasts (CFFA) is the forecast error, which is the negative value of the absolute difference between forecasted and actual value of cash flow per share, deflated by stock price in prior period. Quarterly forecast error is defined as the absolute forecast error of cash flow per share for firm i in quarter t:

$$CFCRROR(Q)_{i,t} = \left|QCF^{Q}_{i,t,j} - CPS^{Q}_{i,t}\right| / |SP_{i,t} \qquad (3)$$

Subscripts i, t and j denote firm i, quarter t and consensus cash flow forecast j. QCF is the analyst mean consensus forecasted value of cash flow per share form firm i and quarter t, and CPS is the actual cash flow per share for firm i and quarter t. Forecast j is the last consensus forecast during quarter t. To compute analysts' quarterly EPS consensus, I use IBES database to extract unadjusted quarterly EPS estimates (current or next quarter) issued within a specified window of 90 days before a specific earnings announcement date, and then I compute the consensus at mean[5]. Both QCF and CPS are obtained from the I/B/E/S database. Q has the value of 0,1 or 2, indicating consensus forecasted value of cash flow per share current year t, year t+1 or year t+2. Therefore, the first variable CFCRROR_0 measures the forecast accuracy of analysts' cash flow forecasts for the current quarter. The second variable CFCRROR_1

[5] I use Kai Chen's SAS programming approach to compute analyst quarterly EPS and CPS consensus. The programming details are at: http://kaichen.work/?p=371.

measures the forecast accuracy of analysts' cash flow forecasts one quarter ahead and third variable is CFCRROR_2 measures the forecast accuracy of analysts' cash flow forecast for two quarters ahead. Therefore, CFFA is either CFCRROR_0, CFCRROR_1 or CFCRROR_2.

Following Kim, Kross and Suk (2015), I include the control variable CFO_VOL for analysts' inherent difficulty in forecasting firm's cash flows. The coefficient on *CFO_VOL* is predicted to be negative, indicating that the uncertainty of future performance is negatively associated with analysts' forecasting abilities in the form of cash flow forecast accuracy. I control operating cash flows divided by average assets (CFO), which is a proxy for degree of the liquidity constraint. I predict the coefficient on CFO to be positive. *HORIZON* controls for the age of each forecast. HORIZON is defined as the number of days between the earnings announcement date and the forecast issuance date and I divide *HORIZON* by 100 (Kim et al. 2015). Since analysts' forecasting abilities improve as their forecast dates become closer to actual earnings announcement dates (Brown, 2001), the coefficient on HORIZON is expected to be *negative*. SIZE is included to be a proxy for a firm's information environment. *SIZE* is expected to be *negatively* associated with the forecast error because a greater size indicates a better informational environment. *BM* and *LEV* are controlled and are expected to be positively related to analysts' forecast error because they may represent inherent firm risk.

Year dummies (YEAR_DUMMIES) and industry dummies (INDUSTRY_DUMMIES) based on the 2-digit I/B/E/S SIC codes control for year- and industry-effects. Year dummies are for the EPS forecast issue year. All continuous variables in the regression are winsorized at the 1 and 99 percentiles to remove potential outliers. I provide detailed definitions of these variables in Appendix II.

3.3.5 Sub-dimensions of ESG issues and Cash Flow Forecast Accuracy

In hypotheses H3, I predict that a firm's media coverage of each of the three categories of ESG issues is positively related with the firm's analyst cash flow forecast accuracy. Following Burke et al. (2019), I consider the measures of the presence of environmental, social and governance issues coverage. I first count the number of environmental issues covered (Sum_environment_covered), the number of social issues covered (Sum_social_covered), and the number of governance issues covered (Sum_governance_covered) by each quarter and each firm. Then I replace ESG_INDEX with each of these three variables into the regression model on Equation (2) and test Hypothesis 3. H3 indicates that a firm's media coverage of environmental issues, social issues or governance issues is positively related with the firm's analyst cash flow forecast accuracy. According to H3, the coefficients on Sum_environment_covered, Sum_social_covered, and Sum_governance_covered are expected to be positive and significant.

3.3.6 Propensity Score Matching Sample

My results for H2 may be affected by endogeneity[6] issues due to sample selection bias. Specifically, my inferences may be attributable to an insufficient control for differences in observable variables between firms with differing ESG risk. Equation 1 and 2 above include control variables, which help mitigate selection bias by holding constant differences in observable firm characteristics. However, this approach (i.e., inclusion of control variables) imposes a linear relationship among the variables, potentially leading to further biases (Tucker 2010). Following Rosenbaum and Rubin (1983), I use a propensity score-matched sample to

[6] Endogeneity refers to situations where an explanatory variable is correlated with the error term. It arises when an omitted variable is confounding both independent and dependent variables, or when independent variables are measured with error. if endogeneity problem exists, then the estimate of the regression coefficient in an ordinary least squares (OLS) regression is biased. See Wooldridge (2009).

mitigate concerns about selection bias resulting from observable firm characteristics for checking robustness of my results. I use the propensity score matching (PSM) to control for differences in firm characteristics between firms with high ESG risk to firms that did not exhibit high ESG risk. Firms with the index between 76 and 100 have very high-risk exposure, firms with the index between 51 and 75 have high risk exposure, the index between 26 and 50 indicates median risk exposure, and the index below 25 are low risk exposure firms. Firms with the index between 76 and 100 are considered very high-risk firms and firms with the index below 25 are considered low-risk firms. I check the distributions of my sample's ESG indices (i.e., Current RRI, Peak RRI and RRI Trend) across years by ranking the ESG indices into five groups and find that from 2007 to 2016, firms in my samples have RRI scores ranked in Group 2 (between 21 and 40) or 3 (between 21 and 40). Therefore, ESG_INDEX is converted into an indicator variable by using the sample mean split (i.e., ESG_INDEX_PSM) and using it in the first stage as the dependent variable. ESG_INDEX_PSM is used to assign firms with ESG scores higher than the sample mean (ESG_INDEX_PSM=1) and firms with ESG scores lower than the sample mean (ESG_INDEX_PSM=0). Each high-ESG-risk firm is matched with its low-ESG-risk firms that has the closest predicted value from the equation (4) below within a maximum distance of one percent. Following Hsu et al. (2017) and Bhandari and Kohlbeck (2018), I use the first-stage probit regression model of the likelihood that a firm exhibits high ESG risk in the following:

$$ESG\_INDEX\_PSM_{it} = \alpha_0 + \alpha_1 LNASSETS_{it} + \alpha_2 LEVERAGE_{it} + \alpha_3 LOSS_{it} + \alpha_4 RD + \alpha_5 RET\_SD_{it} + \alpha_6 HHI_{it} + \alpha_7 DMERGER_{it} + \alpha_8 YEAR\_DUMMIES + \alpha_9 INDUSTRY\_DUMMIES + \varepsilon_{it} \quad (4)$$

The following is the second-stage main regression model based on Equation (2) to test the relation between media coverage of negative ESG issues and analyst cash flow forecast accuracy:

$$CFFA_{it} = \alpha_0 + \alpha_1 ESG\_INDEX\_PSM_{it} + \alpha_2 CFO\_VOL_{it} + \alpha_3 CFO_{it} + \alpha_4 HORIZON + \alpha_5 SIZE_{it} + \alpha_6 BM_{it} + \alpha_7 LEV_{it} + \alpha_8 YEAR\_DUMMIES + \alpha_9 INDUSTRY\_DUMMIES + \varepsilon_{it} \quad (5)$$

3.3.7 Heckman's Two Stage Analysis

To mitigate the potential endogeneity concern, I use the Heckman's two stage regression as an additional analysis (Heckman,1979). To perform the Heckman's two stage analysis, the variable ESG_INDEX is converted into an indicator variable by using the sample median split (i.e., ESG_INDEX_HIGHER) and using it in the first stage as the dependent variable[7]. Following Bhandari and Kohlbeck (2018), the first-stage regression for my two-stage analyses is the determinant of ESG risk of a firm presented in the following:

$$ESG\_INDEX\_HIGHER_{it} = \alpha_0 + \alpha_1 AGE_{it} + \alpha_2 RD + \alpha_6 YEAR\_DUMMIES + \alpha_7 INDUSTRY\_DUMMIES + \varepsilon_{it} \quad (6)$$

In the first stage, a probit model regression is used as indicated in Equation (6). Horjoto and Jo (2011) document that firm age is significantly correlated with CSR practices, but is not correlated with firm's industry adjusted performance. Ye and Zhang (2011) show that R&D intensive firms are more likely to contribute to charitable activities. The explanatory variables in

[7] I check the distributions of my sample's ESG indices (i.e., Current RRI, Peak RRI and RRI Trend) across years by ranking the ESG indices into five groups and find that from 2007 to 2016, most of the firms in my sample have RRI scores ranked in Group 2 (between 21 and 40) or 3 (between 21 and 40). The distribution of my sample is left-skewed, therefore I use median split based on ESG_INDEX of the sample firms to obtain ESG_INDEX_HIGHER.

the first-stage probit regression include industry and year dummy variables. The self-selection parameter LAMBDA (or inverse Mill's ratio) is calculated using the estimated parameters from the first-stage probit regression model. LAMBDA is added as an additional explanatory variable in the second-stage OLS regression model. The second-stage OLS regression model is the main model in Equation (2) to test H2. In the second stage, I substitute the predicted value of ESG_Index_Higher from the first stage model for ESG_INDEX in Equation (2) and re-estimate my main models.

3.3.8 Measures of the Reach of Media Outlet and Severity of Media coverage of ESG issues

RepRisk provides the source of reach data included in the RepRisk Issue (ESG Issue) data by assessing the influence or readership of the media outlet in which the ESG risk incident was published in terms of circulation of the media sources and geographic range. Articles are classified into three levels of reach. High reach refers to high influence sources including the Financial Times, the New York Times, the BBC, and the CNN International. Medium reach refers to medium influence sources including most national and regional media, international NGOs and state, national and international governmental bodies with a circulation of at least 150,000. Low reach refers to low influence sources including local media and local newspapers with a circulation of less than 150,000. Each level includes a news count reflecting the number of risk incidents that were given each respective score that month. The RepRisk Issue (ESG Issue) data also provides a breakdown of the severity of the incidents. The severity of media coverage of negative ESG issues refers to the harshness of the criticism. The severity is determined along three dimensions: the consequences of the risk incident, the extent of culpability, and the extent

of irresponsibility. Each level includes a news count reflecting the number of risk incidents that were given the respective severity score that month.

Following Kolbel et al. (2017), I create news counts that break down negative ESG issues coverage in different categories. I create separate counts for the occurrence of articles with *high reach*, *medium reach*, and *low reach* as I counted negative ESG issues coverage per firm and quarter for each of the three broad categories of 28 ESG issues. The same procedure is applied to *high severity*, *medium severity*, and *low severity* per firm and quarter for each of the three broad categories of 28 ESG issues. I form all possible combinations between reach and severity in a 3 × 3 matrix and count media articles for the new nine different categories. These nine additional variables are abbreviated with *LoRch_LoSev* indicating low reach and low severity, *LoRch_MedSev* indicating low reach and medium severity, *LoRch_HiSev* indicating low reach and high severity, *MedRch_LoSev* indicating medium reach and low severity, *MedRch_MedSev* indicating medium reach and medium severity, *MedRch_HiSev* indicating medium reach and high severity, *HiRch_LoSev* indicating high reach and low severity *HiRch_MedSev* indicating high reach and medium severity, and *HiRch_HiSev* indicating high reach and high severity. I then replace ESG_INDEX with all these nine variables for each of environmental, social or governance issues in Equation (2). This leads to the alternative specifications that preserve the categorical structure of reach and severity. I provide detailed definitions of these variables in Appendix II.

3.3.9 Measuring Liquidity Level and Liquidity Risk

Liquidity is generally defined as the ability to trade large quantities quickly at low cost

with little price impact (Liu 2006). Empirical studies have employed several liquidity measures. These studies typically focus on one dimension of liquidity such as an asset's order flow, the trading cost dimension, transaction quantity dimension and the price impact to capture the price reaction to trading volume to measure illiquidity. For example, Amihud and Mendelson (1986)'s bid-ask spread measure relates to the trading cost dimension, the turnover measure of Datar et al. (1998) captures the trading quantity dimension, and the measures in Amihud (2002) and Pastor and Stambaugh (2003) use the concept of price impact to capture the price reaction to trading volume. Liu (2006) proposes a new liquidity measure for individual stocks, defined as the standardized turnover-adjusted number of zero daily trading volumes over the prior 12 months. This measure captures multiple dimensions of liquidity such as trading speed, trading quantity, and trading cost, with emphasis on trading speed which is the continuity of trading and the potential delay or difficulty in executing an order, which existing studies ignores (Liu 2006). Liu (2006) find that the stocks that the new liquidity measure identifies as less liquid tend to be small value, low-turnover, high bid-ask spread, and high return-to-volume stocks. The new liquidity measure can predict stock returns one or more years ahead. His study confirms that liquidity is an important source of priced risk for asset pricing.

Liu's 2006 two-factor (market and liquidity) model well explains the cross-section of stock returns. I follow Liu (2006) to measure liquidity risk.

The liquidity level of each individual stock at the end of each month is measured as the standardized turnover-adjusted number of zero trading volume days over the prior 12 months:

$$ILLIQUIDITY = \left[NZero_{12} + \frac{1/Turnover_{12}}{Deflator}\right] \times \frac{279}{NoTD_{12}} \qquad (7)$$

Where NZero12 is the number of days with zero trading volume in the prior year. Turnover12 Daily turnover aggregated over the prior year and daily turnover is the number of

shares traded on a day divided by the number of shares outstanding. $NoTD_{12}$ is the total number of trading days in the market over the prior year and 279 is the average number of annual trading days during the sample period. Following Liu (2006), Deflator is 11,000 because it is greater than $1/Turnover_{12}$ for all sample stocks.

The new liquidity measure (ILLIQUIDITY) given by Equation (7) captures multiple dimensions of liquidity, placing emphasis on trading speed. Liu (2006) provides three reasons why this liquidity measure relates to multiple dimensions. First, in the new liquidity measure (ILLIQUIDITY), the number of zero daily trading volumes over the prior 12 months captures the continuity of trading and the potential delay or difficulty in executing an order. In other words, the absence of trade in a security indicates its degree of illiquidity. Second, the turnover adjustment enables the new liquidity measure to capture the dimension of trading quantity. The new liquidity measure identifies stocks that are most liquid as those traded every day with large turnovers over the prior 12 months. The new liquidity measure (ILLIQUIDITY) uses the pure number of zero daily trading volumes over the prior 12 months to identify the least liquid stocks, but it chooses turnover to distinguish the most liquid stocks among frequently traded stocks as classified by the pure number of zero trading volumes. Third, the new liquidity measure (ILLIQUIDITY) reflects the more liquid the stock, the less transaction costs to trade. Lesmond et al. (1999) model transaction costs based on the frequency of zero-return days and show that zero returns or no trades occur if transaction costs are high. Their finding indicates that the number of zero returns is a good proxy for transaction costs. The new liquidity measure (ILLIQUIDITY) relates to the trading cost dimension of liquidity, given the close link between zero returns and no trades.

Liu (2006) incorporates a liquidity factor into a liquidity-augmented capital asset pricing model, in line with O'Hara (2003), who argues that transactions costs of liquidity and risks of price discovery should be incorporated into asset pricing models. To develop a two-factor augmented CAPM that connect expected returns with a stock's market risk and liquidity risk, Liu (2006) constructs the liquidity factor as the profits of the mimicking portfolio that buys $1 of the low-liquidity portfolio and sells $1 of the high-liquidity portfolio. He finds that the mimicking liquidity factor is highly negatively correlated with the market, reflecting that when the economy performs badly with low liquidity, investors require a high liquidity premium to compensate them for bearing high liquidity risk. Specifically, using NYSE/AMEX/NASDAQ ordinary common stocks, Liu (2006) constructs a mimicking liquidity factor, LIQ, based on the Illiquidity measure. Liu (2006) constructs a two-factor model based on the CAPM, plus the factor LIQ[8] that capture liquidity risk. According to LCAPM, the expected excess return for stock i in month t can be expressed as:

$$E(r_{it}) - r_{ft} = \beta_{m,i}\left[E(r_{mt}) - r_{ft}\right] + \beta_{l,i}E(LIQ_t) \qquad (8)$$

Where $E(r_i)$ is the expected return of the market portfolio, $E(LIQ_t)$ is the expected value of the mimicking liquidity factor, and the factor loadings $\beta_{m,i}$ and $\beta_{l,i}$ are the slopes in the time-series regression:

$$r_{it} - r_{ft} = \alpha_i + \beta_{m,i}\left(r_{mt} - r_{ft}\right) + \beta_{l,i}LIQ_t + \varepsilon_{it} \qquad (9)$$

The two-factor model predicts a relationship between the expected excess return of an asset and its risk, which is measured by two risk factors the assets is exposed to: overall market return (r_{mt}) and the return with the liquidity factors (LIQ). The two-factor model implies that the

[8] I collect liquidity risk factor (LIQ) data from Professor Weimin Liu's profile page: https://www.nottingham.ac.uk/business/people/weimin-liu.html

expected excess return of an asset is explained by the covariance of its return with the market and the liquidity factors. The intercept term (α_i) is the risk-adjusted return of asset *i* relative to the two-factor model. If the two-factor model explains asset returns, the estimated intercept will not be significantly different from zero. The liquidity risk is the measured as the sensitivity of a firm's stock return to market-level liquidity shocks (i.e., "liquidity beta"). The liquidity beta, $\beta_{l,i}$ is the empirical proxy for liquidity risk—a higher value of $\beta_{l,i}$ indicates a higher degree of liquidity risk.

Chen et al. (2017) find that accounting-associated component of liquidity risk is more strongly associated with post-earnings-announcement drift. Inspired by Lambert et al. (2007)'s theoretical work on the effect of information quality on the liquidity risk, I investigate the relation between media coverage of negative ESG issues and accounting-related liquidity risk. Since media coverage of negative ESG issues demonstrates the risk-generating effect of CSI coverage through potential for stakeholder sanctions which may result in lower future earnings, firms who receive media coverage may distort accounting disclosures to mitigate negative consequences. I argue that the substantial effect of accounting quality on cost of capital through liquidity risk due to media coverage of negative ESG issues may be significant. Therefore, I focus on accounting-related liquidity risk. Following Chen et al. (2017), I calculate accounting-associated liquidity risk (AcctLiq_Risk) as the fitted portion of liquidity risk explained by accounting quality. The following is the simple linear regression relating liquidity risk to accounting quality:

$$Liquidity\_Risk_{it} = \alpha_0 + \alpha_1 Aggregate\_Quality_{it} + \varepsilon_{it} \qquad (10)$$

AcctLiq_Risk$_{(10)}$ is calculated using the annual estimates of α_1 ($\hat{\alpha}_1$) in model (10), then AcctLiqRisk$_{(10)}$ = $\hat{\alpha}_1$ x Aggregate_Quality. Then compute nonaccounting-associated liquidity

risk, NonAcctLiq_Risk (10), as the difference between Liquidity_Risk and AcctLiq_Risk(10a). Measurement of aggregate quality is explained in detail in Appendix III.

In hypothesis H4a, I predict that a firm's media coverage of ESG issues is positively related with accounting-related liquidity risk. The following is the regression specification to examine the impact of media coverage of ESG issues on liquidity risk. I estimate the following regression model where year and industry fixed effects are included, and standard errors are heteroscedasticity-consistent on a sample of firm-year observations for firms to test H4a:

$$Liquidity\_Risk_{it} = \beta_0 + \beta_1 ESG\_INDEX_{it} + \beta_2 SIZE_{it} + \beta_3 ILLIQUIDITY_{it} + \beta_4 TURNOVER_{it} + \beta_5 RETURN\_MOMENTUM_{it} + \beta_6 MARKET\_BETA_{it} + \beta_7 ARBITRAGE\_RISK_{it} + \beta_8 SALES\_GROWTH_{it} + \beta_9 OPERATING\_CYCLE_{it} + \beta_{10} CAPITAL\_INTENSITY_{it} + \beta_{11} CASH\_RATIO_{it} + \beta_{12} LOSS_{it} + \beta_{13} BTM_{it} + \beta_{14} YEAR\_DUMMIES + \beta_{15} INDUSTRY\_DUMMIES + \varepsilon_{it} \quad (11)$$

Where the dependent variable is AcctLiq_Risk calculated from model (10) and the independent variable of interest, ESG_INDEX_{it} is one of the three RRI indices in the fiscal period for my study: Current RRI, Peak RRI and RRI trend. The positive and significant coefficient estimate β_1 will indicate that a firm's media coverage of ESG issues is positively related with accounting-related liquidity risk, supporting the prediction in H4a.

Control variables are the variables associated with the market-related characteristics and firm-related characteristics that affect liquidity risk. Following Pastor and Stambaugh (2003) and Ng (2011), the following market characteristics that explain liquidity risk in model (11) are included: market capitalization (SIZE), stock liquidity (ILLIQUIDITY), stock turnover (TURNOVER), and prior returns (RETURN_MOMENTUM). Size is included to control for

differences in liquidity risk among stock with different market capitalizations. Stock illiquidity and Turnover control for a stock's liquidity, which may also vary with its liquidity risk. RETURN_MOMENTUM allows for short-run return dynamics. I predict that firms with larger market capitalization (SIZE), higher liquidity (ILLIQUIDITY), higher stock turnover (TURNOVER), and lower stock performance (RETURN_MOMENTUM) have lower liquidity risk, consistent with prior research (Pastor and Stambaugh 2003; Ng 2011). Following Chen et al. (2017), I control for market beta (MARKET_BETA) and arbitrage risk (ARBITRAGE_RISK) to make sure that $AcctLiqRisk_{(3c)}$ is not contaminated by these two risk characteristics. I predict that liquidity risk is negatively associated with market risk (MARKET_BETA) and positively associated with arbitrage risk (ARBITRAGE_RISK) , according to Ng (2011).

Following Ng (2011), a firm's innate characteristics associated with the firm's information quality are included. For instance, accounting information quality varies with investment opportunities, growth, and the duration of the operating cycle (Dechow and Dichev 2002; Francis et al. 2005; Dichev and Tang 2009). Firm characteristics include change in sales over the prior year (SALES_GROWTH), duration of the operating cycle (OPERATING_CYCLE), ratio of fixed assets to total assets (CAPITAL_INTENSITY), ratio of cash to current liabilities (CASH_RATIO), an indicator for loss firms (LOSS), and book-to-market ratio (BTM). I predict that firm with more changes in sales (SALES_GROWTH), longer operating cycle (OPERATING_CYCLE), higher capital intensity (CAPITAL_INTENSITY) have higher exposure to liquidity risk, possibly because of their higher capital needs (Ng 2011). I predict that firms with higher level of cash ratio (CASH_RATIO), have lower liquidity risk because firms with stronger liquidity position have less exposure to unexpected changes in

market liquidity (Ng 2011). I predict that firms with losses (LOSS), and firms with higher book-to-market equity (BTM) have higher liquidity risk because firms that are more distressed and / or have less growth options have higher liquidity risk. I estimate the above models by year and average the regression coefficients across the annual regressions. I provide detailed definitions of these variables in Appendix II.

In hypothesis H4b, I predict that there is no relation between firm's media coverage of ESG issues and accounting-related liquidity risk when analysts issue cash flow forecasts for the firm. The following is the regression specification to examine the role of analyst cash flow forecast in the relation between media coverage of ESG issues and liquidity risk. I estimate the following regression model where year and industry fixed effects are included, and standard errors are heteroscedasticity-consistent on a sample of firm-year observations for firms to test H4b:

$$Liquidity\_Risk_{it} = \beta_0 + \beta_1 ESG\_INDEX_{\ it} + \beta_2 DCF_{it} + \beta_3 ESG\_INDEX_{it} * DCF_{it} + \beta_4 SIZE_{it} + \beta_5 ILLIQUIDITY_{it} + \beta_6 TURNOVER_{it} + \beta_7 RETURN\_MOMENTUM_{it} + \beta_8 MARKET\_BETA_{it} + \beta_9 ARBITRAGE\_RISK_{it} + \beta_{10} SALES\_GROWTH_{it} + \beta_{11} OPERATING\_CYCLE_{it} + \beta_{12} CAPITAL\_INTENSITY_{it} + \beta_{13} CASH\_RATIO_{it} + \beta_{14} LOSS_{it} + \beta_{15} BTM_{it} + \beta_{16}\, YEAR\_DUMMIES + \beta_{17} INDUSTRY\_DUMMIES + \varepsilon_{it} \quad (12)$$

Where the dependent variable is AcctLiq_Risk calculated from model (10) and the independent variable of interest, ESG_INDEX_{it} is one of the three RRI indices in the fiscal period for my study: Current RRI, Peak RRI and RRI trend. The negative and significant coefficient estimate β_3 will indicate that the relation between firm's media coverage of ESG

issues and accounting-related liquidity risk is decreased when analysts issue cash flow forecasts for the firm, supporting the prediction in H4b.

DCF is an indicator variable that is valued one if at least one quarter or annual cash flow forecast issued by analysts during the fiscal year, and zero otherwise. The variable of interest is the interaction term between DCF and ESG_index, which captures the role of analyst cash flow forecasts in the relation between media coverage of ESG issues and liquidity risk.

Chapter 4 Empirical Results

4.1 Summary Statistics

4.1.1 Descriptive Statistics

4.1.1.1 Sample Selection

Table 1 presents sample selection for the main models used to test main hypotheses. according to the table, after matching observations from all five datasets (i.e., Compustat, RepRisk, Institutional Ownership, IBES and Liquidity risk database), there are 17,831 observations used in the DCF model, 2,780 observations used in the CFFA model and 4,693 observations in the Liquidity Risk model for the periods from 2007 to 2016.

| Insert Table 1 here |

4.1.1.2 Descriptive Statistics for the DCF Model:

Table 2 presents the descriptive statistics for the variables in the DCF model. The propensity to issue a cash flow forecast for a firm (DCF) is 55% averagely as the mean for DCF is 0.55. The mean and median for the standard deviation of operating cash flow variable (CFO_VOL) are 0.045 and 0.036. The mean and median for CFO are 0.044 and 0.035. Operating cash flows account for 4.4% of average total asset for a firm on average. The mean and median for ABS_ACCRUAL are 0.017 and 0.009. This suggests that the absolute value of earnings minus operating cash flows accounts for 1.7% of average total assets for a firm in the sample. Gross property, plant, and equipment accounts is on average 56.8% of average assets, suggesting that firms in my sample are capital-intensive. The mean and median for ALTMAN_Z are 3.31 and 2.07. An Altman Z-score of lower than 1.8, indicates that the company is heading for bankruptcy. Companies with Altman Z-scores above 3 are unlikely to enter bankruptcy. Altman

Z-scores in between 1.8 and 3 lie in a gray area. In my sample, most of the firms are in the grey area. The mean and median for SIZE are 8.01 and 7.99. The mean and median for a number of analysts following a firm (LNNUMEST) are 1.07 and 1.10. The mean and median for BM are 0.604 and 0.505. On average, a firm has 60.4% of equity book value relative to its market value. The mean and median for AGE are 33 and 27. On average, a firm in my sample is 33 years old. According to the mean and median for DLOSS, averagely 19% of firms experienced losses. The mean and median for FIN_CRISIS are 0.1, indicating that 10% of firms on average experienced recent financial-crisis period.

| Insert Table 2 here |

4.1.1.3 Descriptive Statistics for the CFFA Model:

Table 3 presents the descriptive statistics for the variables in the CFFA model. The mean and median for Current RRI for my sample is 9.46 and 0, suggesting that Current RRI variable is left-skewed. Most of the firms in my samples have low reputational risk exposure related to ESG issues. The minimum value is -1 and the maximum value reaches 81. The mean and median for Peak RRI for my sample is 17.61 and 22. The minimum value is -1 and the maximum value is 83. The mean and median for RRI Trend for my sample is 9.38 respectively and 0, suggesting that the distribution of this variable is left-skewed. On average, a firm has an increased value of 9.38 in RepRisk Index (RRI) between current date and the date 30 days ago. The highest increase in my sample is 74 and the lowest is -1 which indicates the decrease in RRI. The mean and median for cash flow forecast accuracy variable (CFFA) are -0.054 and -0.009. The mean and median for BM are 0.604 and 0.505. On average, a firm has 60.4% of equity book value relative to its market value. The mean and median for the standard deviation of operating cash flow

variable (CFO_VOL) are 0.045 and 0.036. The mean and median for CFO are 0.044 and 0.035. Operating cash flows account for 4.4% of average total asset for a firm on average. The mean and median for HORIZON are 32.89 and 31. This suggests that the average difference between the earnings announcement date and the forecast issuance date is 32.89 days. The mean and median for LEV are 0.222 and 0.181. The book value of debt accounts for 22.2% of book value on average respectively for a firm in my sample. The mean and median for SIZE are 8.01 and 7.99, respectively.

| Insert Table 3 here |

4.1.1.4 Descriptive Statistics for the Liquidity Risk Model:

Table 4 presents the descriptive statistics for the variables in the liquidity risk model. The mean and median for Liquidity_risk (bLi) are -0.11 and -0.03, respectively. The mean and median Liquidity_Risk are both negative and higher than -0.055 and -0.133 reported by Chen et al. (2017), indicating that investors on average face relatively higher liquidity risk. The mean and median for Accruals quality, measured as the standard deviation of residuals over the last five years from the modified Dechow and Dichev (2002) model by industry-year are -0.514 and -0.78. The mean and median for Abnormal accruals from cross-sectional estimation of the Jones (1991) model by industry-year and adjusted by operating performance (Kothari et al. 2005) are 0.244 and 0.256. The mean and median for Income_Smoothing are 0.004 and 0.003. The mean and median for AcctLiq_Risk are 0.009 and -0.001. The mean and median for NonacctLiq_Risk are -0.392 and -0.21. After decomposing liquidity risk, the mean of AcctLiqR_isk is less negative than NonacctLiq_Risk, and AcctLiq_Risk has smaller variation than NonacctLiq_Risk. The mean and median for SIZE are 7.927and 7.954. Illiquidity measures the degree of illiquidity,

with a more negative value indicating a more liquid stock. The mean and median for Illiquidity, measured as natural log of 12-month illiquidity measure based on Liu (2006) are -0.67 and -0.731 respectively. These are much smaller than those reported by Chen et al. (2017), indicating that my sample firms have a lower level of liquidity on average. The mean and median for Stock turnover are 0.011 and 0.007. The mean and median for Return_Momentum are 1.101 and 1.072. The mean and median for Market_beta are 1.164 and 1.091. The mean and median for Arbitrage_risk are 0.082 and 0.063. The mean and median for Sales_Growth are 0.178 and 0.052. The change in sales over the prior year for my sample is 17.8% increase. The mean and median for Operating_Cycle are 5.403 and 5.32. The mean and median for Capital_Intensity are 0.129 and 0.024. The mean and median for Cash_Ratio are 1.019 and 0.477. The cash and cash equivalent account for 101.9% of current liability in my sample. The mean and median for LOSS are 0.17 and 0. On average, 17% of firms experienced losses. The mean and median for BTM are 0.719 and 0.605.

| Insert Table 4 here |

4.1.2 Distribution

4.1.2.1 Distribution for Firm Current RRI across years

For the sample, I rank firms' Current RRI scores into 5 groups for each year. Current RRI captures the current level of media and stakeholder exposure of a firm related to ESG issues. Table 5, Column 1 presents the distribution of firms by year according to their Current RRI scores. In 2007, most of the firms have their Current RRI scores in Group 3. Similarly, in 2008, most of the firms have their Current RRI scores in Group 3. In 2009, most of the firms have their Current RRI scores in Group 2, with the number slightly higher than that in Group 3.In 2010,

most of the firms have their Current RRI scores in Group 2, with the number slightly higher than that in Group 3.In 2011, most of the firms have their Current RRI scores in Group 2.In 2012, most of the firms have their Current RRI scores in Group 2.In 2013, most of the firms have their Current RRI scores in Group 3, with the number slightly higher than that in Group 2.In 2014, most of the firms have their Current RRI scores in Group 3, with the number slightly higher than that in Group 2.In 2015, most of the firms have their Current RRI scores in Group 2, with the number higher than that in Group 3.In 2016, most of the firms have their Current RRI scores in Group 2. Overall, from 2007 to 2016, firms in my samples have Current RRI scores ranked in Group 2 or 3 on average.

4.1.2.2 Distribution for Firm Peak RRI across years

For the sample, I rank firms' Peak RRI scores into 5 groups for each year. Peak RRI captures the highest level of media and stakeholder exposure related to ESG issues over the last 2 years. Table 5, Column 2 presents the distribution of firms by year according to their Peak RRI scores. In 2007, most of the firms have their Peak RRI scores in Group 3. Similarly, in 2008, most of the firms have their Peak RRI scores in Group 3. In 2009, most of the firms have their Peak RRI scores in Group 3, with the number slightly higher than that in Group 2. In 2010, most of the firms have their Peak RRI scores in Group 2, with the number higher than that in Group 3. In 2011, most of the firms have their Peak RRI scores in Group 2. In 2012, most of the firms have their Peak RRI scores in Group 3, with the number higher than that in Group 2. In 2013, most of the firms have their Peak RRI scores in Group 3, with the number higher than that in Group 2. In 2014, most of the firms have their Peak RRI scores in Group 3. In 2015, most of the firms have their Peak RRI scores in Group 3, with the number higher than that in Group 2. In

2016, most of the firms have their Peak RRI scores in Group 3, with the number higher than that in Group 4. Overall, from 2007 to 2016, firms in my samples have Peak RRI scores ranked in Group 3, on average.

4.1.2.3 Distribution for Firm RRI Trend across years

For the sample, I rank firms' RRI Trend scores into 5 groups for each year. RRI Trend captures the difference in the RepRisk index (RRI) between current date and the date 30 days go. Table 5, Column 3 presents the distribution of firms by year according to their RRI Trend scores. In 2007, most of the firms have their RRI Trend scores in Group 3. Similarly, in 2008, most of the firms have their RRI Trend scores in Group 3. In 2009, most of the firms have their RRI Trend scores in Group 2, with the number very close to that in Group 3. In 2010, most of the firms have their RRI Trend scores in Group 2, with the number higher than that in Group 3. In 2011, most of the firms have their RRI Trend scores in Group 2. In 2012, most of the firms have their RRI Trend scores in Group 2, with the number higher than that in Group 3. In 2013, most of the firms have their RRI Trend scores in Group 2, with the number higher than that in Group 3. In 2014, most of the firms have their RRI Trend scores in Group 3, with the number higher than that in Group 2. In 2015, most of the firms have their RRI Trend scores in Group 2, with the number higher than that in Group 3. In 2016, most of the firms have their RRI Trend scores in Group 2. Overall, from 2007 to 2016, firms in my samples have RRI Trend scores ranked in Group 2, on average.

| Insert Table 5 here |

4.1.3 Correlations

4.1.3.1 Correlation for the DCF model

Table 6 presents the correlations of the variables used in the DCF model. As shown, three of the RepRisk Indices are positively correlated with the probability of issuing a cash flow forecast (DCF), and the correlations between the variables are highly significant (p-value<0.0001). The propensity to issue a cash flow forecast is lower when the future cash flow uncertainty (CFO_VOL) is greater, when a firm has higher level of absolute value of accruals (ABSACCRUAL), when a firm has better financial health (ALTMAN_Z), when a firm is followed by more analysts (ANALYST_FOLLOWING), when a firm has higher book-to-market ratio (BM), when a firm experienced losses (DLOSS) and when a firm experienced recent financial crisis (FIN_CRISIS). The propensity to issue a cash flow forecast is higher when a firm has higher level of operating cash flows (CFO), when a firm has more fixed assets relative to total assets (CAP_INT), when a firm has higher level of market capitalization (SIZE), and when a firm is older (AGE).

Insert Table 6 here

4.1.3.2 Correlation for the CFFA model

Table 7 presents the correlations of the variables used in the CFFA model. As shown, three of the RepRisk Indices are negatively correlated with cash flow forecast accuracy (CFFA). However, the correlations are not significant. CFFA is negatively correlated with CFO_VOL (-0.06297, p-value= 0.0015), consistent with the notion that the cash flow forecasts are less accurate when the uncertainty of cash flows is greater. CFFA is positively correlated with LEV (0.05011, p-value= 0.0117).

| Insert Table 7 here |

4.1.3.3 Correlation for the Liquidity Risk Model

Table 8 presents the correlations of the variables used in the liquidity risk model. As shown, three of the RepRisk Indices are positively correlated with accounting-associated liquidity risk (Accliq_risk), however, the correlations are not significant. Accounting-associated liquidity risk is lower when Accruals_quality is higher, when the aggregate measure of accounting quality (Aggregate_quality) is higher, when a nonaccounting-associated liquidity risk (Nonaccliq_risk) is higher, when a firm has higher level of the market value of equity (SIZE), when arbitrage risk (Arbitrage_Risk) is higher, when a firm has higher level of operating cycle (Operating_Cycle), when a firm has higher level of capital intensity (Capital_Intensity), when a firm has more cash and cash equivalents (Cash_Ratio).

| Insert Table 8 here |

4.2 DCF Models

4.2.1 Main models to test H1

Hypothesis 1 (H1) examines the impact of a firm's CSI coverage on analyst's decision to issue a cash flow forecast for the firm. Table 9 present the results for the regression based on Equation (1) to test H1. I predict a negative relation between the two in H1. In Column (1), the independent variable of interest is Current RRI. The negative and significant coefficient on Current RRI (-0.0004, standard errors=0.0002, p-value= 0.0232) shows that analysts are less likely to issue a cash flow forecast when a firm has a higher current level of media and stakeholder exposure associated with ESG issues. The result is consistent with the prediction in

H1. As shown, the propensity to issue a cash flow forecast is lower when future cash flow uncertainty (CFO_VOL) is higher, when a firm has better financial health (ALTMAN_Z), when a firm is followed by more analysts (ANALYST_FOLLOWING), when a firm is older (COMPANY_AGE). The propensity to issue a cash flow forecast is lower during the financial crisis period (FIN_CRISIS). However, the propensity to issue a cash flow forecast is higher when the liquidity constraint is less severe (CFO), when a firm has higher level of accruals (ABS_ACCRUAL), when a firm is more capital-intensive (CAP_INT), when a firm has better information environment (SIZE), when a firm is high-growth firm (BM) and when a firm is experiencing losses (DLOSS). In Column (2), the independent variable of interest is Peak RRI. The coefficient on Peak RRI is negative and significant (-0.0004, standard errors=0.0002, p-value=0.0134). This indicates that the probability of issuing a cash flow forecast is decreased when a firm has the highest level of reputational risk exposure related to ESG issues over the last two years. The result is also consistent with the prediction in H1. The results for control variables are consistent with those in Column (1). However, in Column (3), the independent variable of interest is RRI Trend. The coefficient on RRI Trend is not significant. I obtain similar results for other control variables. Overall, the results in Table 9 provide evidence consistent with H1.

| Insert Table 9 here |

4.2.2 Exclude Financial Firms and Utility Firms

Table 10 present the results for the regression based on Equation (1) to test H1 for the sample that excludes financial firms and utility firms. I exclude firms from financial and utility sectors and rerun the DCF models based on Equation (1) with each of the three ESG indices. I find that the coefficient estimates of each of the three ESG indices are negative and highly

significant. These results indicate the probability of issuing a cash flow forecast is decreased when a firm has higher level of media coverage of ESG issues, consistent with H1. These results suggest that analysts tend to issue fewer cash flow forecasts for a firm having more problems with their ESG practices.

| Insert Table 10 here |

4.3 CFFA Models

4.3.1 Main Models to test H2

Hypothesis 2 (H2) examines the impact of a firm's CSI coverage on analyst cash flow forecast accuracy. Table 11 presents the results of the regression models based on Equation (2) for testing H2. Columns 1 to 3 shows the results for models using Current RRI, Peak RRI and RRI Trend as independent variables separately. In Column (1), the coefficient on Current RRI is negative and significant (-0.003, standard errors=0.001, p-value=0.0559), suggesting the negative relationship between a firm's media coverage of ESG issues and cash flow forecast accuracy. This result indicates that when the current level of media and stakeholder exposure of a firm related to ESG issues is higher, analyst cash flow forecast in the current quarter is less accurate. This is consistent with the prediction in H2. The negative and significant coefficient on HORIZON indicates that analyst cash flow forecast accuracy increases when the difference (in days) between the earnings announcement date and the forecast issuance date is shorter. The coefficient on SIZE is positive and significant (0.035, standard errors=0.019, p-value=0.0736), showing that a better information environment increases the accuracy of analyst cash flow forecasts. The coefficients on other controls variables are not significant.

In Column (2), the independent variable of interest is Peak RRI which captures the highest level of media and stakeholder exposure related to ESG issues over the last 2 years. The coefficient on Peak RRI is negative and significant (-0.001, standard errors=0.001, p-value=0.0746). This shows that analyst cash flow forecast in the current quarter is less accurate when the firm is exposed to a higher level of reputational risk exposure from media and stakeholders, consistent with the prediction in H2. The negative and significant coefficient on HORIZON (-0.002, standard errors=0.001, p-value=0.057) and the positive coefficient on SIZE(0.03, standard errors=0.017, p-value=0.0765) suggest that analyst cash flow forecasting ability improves as the forecast date becomes closer to actual earnings announcement date and that better information environment improves cash flow forecast accuracy.

In Column (3), the independent variable of interest is RRI Trend which captures the difference in the RepRisk index (RRI) between current date and 30 days go. RRI Trend monitors the progress of the risk exposure of the company related to ESG issues. The coefficient on RRI Trend is negative and significant (-0.003, standard errors=0.002, p-value=0.0535). This result shows that when the RRI increases between current date and the 30 days ago, analyst forecast accuracy in the current quarter is decreased. This result holds for the prediction in H2. Overall, the results indicate that a firm's CSI coverage is negatively associated with analyst cash flow forecast accuracy.

| Insert Table 11 here |

4.3.2 Environmental, Social and Governance aspects of ESG on Analysts Cash Flow Forecasts

Table 12 presents the results for the regressions examining the effect of the three categories of ESG issues covered by the media on analyst cash flow forecast accuracy to test hypothesis H3. The number of environmental issues covered, the number of social issues covered, and the number of governance issues are separately included in the model as independent variables of interest. In Column (1), the coefficient on the number of environmental issues covered is negative and significant (-0.022, standard errors=0.012, p-value=0.073), suggesting that analyst forecast accuracy is decreased when the firm has media coverage of more environmental issues. This contradicts the prediction in H3. In addition, in Columns (2) and (3), the coefficients on both the number of social issues covered and the number of governance issues are not significant.

| Insert Table 12 here |

I also rerun the model where the number of environmental issues covered, the number of social issues covered, and the number of governance issues are all included as independent variables of interest. I did not tabulate the results in the paper. According to the analysis, the coefficient on the number of environmental issues covered is negative and significant (-0.025, standard errors=0.0143, p-value=0.0796), suggesting that analyst forecast accuracy is decreased when the firm has media coverage of more environmental issues. This contradicts with H3. The coefficients on both the number of social issues covered and the number of governance issues are not significant.

I also consider the effects of different levels of media reach and different levels of severity of the risk incidents associated with each of the three ESG issues categories. The related variables are defined in Appendix II. Table 13 presents the results for the impact of media reach

for each of the ESG issues on analyst cash flow forecast accuracy and Table 14 presents the results for the impact of severity for each of the ESG issues on analyst cash flow forecast accuracy.

In Table 13, In Column (1), the coefficient on Sum_environment_medium_reach is negative and significant (-0.094, standard errors=0.055, p-value= 0.0895). This suggests that when an environmental issue is covered by a medium media reach outlet in current quarter t, analyst cash flow forecast in the current quarter t is less accurate. Column (2) shows the result for the impact of media reach outlet of risk incidents associated with social issues. The positive and significant coefficient on Sum_Social_High_Reach1 (0.071, standard errors=0.042, p-value=0.0896) shows that cash flow forecast accuracy is increased when more risk incidents associated with social issues are covered by high reach media outlet. Column (3) present the result for the impact of media reach outlet of risk incidents associated with governance issues. The coefficient on each level of media outlet is insignificant.

Insert Table 13 here

Table 14 presents the results of the impact of severity for each category of the three ESG issues on analyst cash flow forecast accuracy. In Column (1), the coefficient on Sum_Environment_Low_Severity is negative and significant (-0.053, standard errors=0.029, p-value= 0.0687), suggesting that cash flow forecast accuracy is decreased when an environmental issue associated with risk incidents is of low severity. Column (2) presents the result for the impact of severity of risk incidents associated with social issues. The coefficient on Sum_Social_High_Severity is negative and significant (-0.039, standard errors=0.022, p-value= 0.084), indicating that cash flow forecast accuracy is decreased when more risk incidents

associated with social issues are highly severe. Column (3) presents the result for the impact of severity of risk incidents associated with governance issues. The coefficient on Sum_Governance_Medium_Severity is positive and significant (0.044, standard errors=0.022, p-value= 0.0492), indicating that cash flow forecast accuracy is improved when more risk incidents associated with governance issues are of medium severity.

| Insert Table 14 here |

Following Kolbel et al. (2017), I also form all possible combinations between reach and severity in a 3 × 3 matrix and count media news articles for the new nine different categories. The variables for the nine combinations are included in the model.

Table 15 presents the result for the regression examining the joint effect of media outlet and the severity of risk incidents or coverage associated with environmental issues on analyst cash flow forecast accuracy. The coefficient on E_LoRch_MedSev is negative and significant (-0.012, standard errors=0.007, p-value=0.0869). This suggests that when more risk incidents associated with environmental issues are covered by low media reach outlet and is of medium severity, analyst cash flow forecast is less accurate. The negative and significant coefficient on E_MedRch_LoSev (-0.021, standard errors=0.012, p-value=0.0826) shows that cash flow forecast is less accurate when more risk incidents associated with environmental issues are covered by medium media outlet and is of low severity. However, the coefficients on both MedRch_MedSev and E_HiRch_LoSev are positive and significant (0.019, standard errors=0.010, p-value=0.0623; 0.018, standard errors=0.011, p-value=0.0998) respectively, indicating that analyst cash flow forecast is more accurate when more risk incidents associated with environmental issues are covered by medium media reach outlet and is of medium severity or more risk incidents are covered by high media reach outlet and is of low severity. The

coefficient on E_HiRch_MedSev is negative and significant (-0.021, standard errors=0.012, p-value=0.0744). This indicates that cash flow forecast is less accurate when more risk incidents associated with environmental issues are covered by high media reach outlet and is of medium severity. However, the coefficient on E_HiRch_HiSev is not significant.

| Insert Table 15 here |

Table 16 presents the result for the impact of both media reach outlet and severity of risk incidents associated with social issues on analyst cash flow forecast accuracy. The negative and significant coefficient on S_HiRch_MedSev (-0.023, standard errors=0.013, p-value= 0.0859) shows that cash flow forecast is less accurate when more risk incidents associated with social issues are covered by high media reach outlet and of medium severity. The positive and significant coefficient on S_HiRch_HiSev (0.048, standard errors=0.028, p-value= 0.0843) shows that cash flow forecast accuracy is improved when more risk incidents associated with social issues are covered by high media reach outlet and of high severity.

| Insert Table 16 here |

Table 17 presents the result for the impact of both media reach outlet and severity of risk incidents associated with governance issues on analyst cash flow forecast accuracy. In my sample, no risk incidents associated with governance issues are of high severity. According to the result, the coefficients on all seven combinations are not significant.

| Insert Table 17 here |

4.3.3 More controls In the Model

Table 18 presents the result for the impact of both media reach outlet and severity of risk incidents associated with governance issues on analyst cash flow forecast accuracy. I rerun CFFA models by including more control variables. These control variables are firm-related characteristics that affect analyst earnings forecasting ability. According to the negative and significant coefficient on each of the three ESG indices, media coverage of negative ESG issues for a firm is negatively associated with analyst cash flow forecast accuracy. These results are consistent with the prior results for the main CFFA regression models.

When I use cash flow forecast accuracy one-quarter or two quarter ahead as independent variables of interest in the models and run the regressions separately with these additional control variables, the conclusion does not change.

| Insert Table 18 here |

4.3.4 Exclude Financial Firms and Utility Firms

Table 19 presents the result for the regression examining the effect of a firm's each of the three categories of ESG issues covered by the media on analyst cash flow forecast accuracy. I also exclude financial firms and utility firms and rerun the CFFA regression models. According to the negative and significant coefficient on each of the three ESG indices, media coverage of negative ESG issues for a firm is negatively associated with analyst cash flow forecast accuracy supporting H2. These results are consistent with the prior results for the main CFFA regression models. When I use cash flow forecast accuracy one-quarter or two quarter ahead as independent variables of interest in the models and run the regressions separately with these additional control variables, the conclusion does not change.

| Insert Table 19 here |

4.3.5 Models of Cash Flow Forecast Accuracy 1-year-, and 2 year-ahead

Table 20 reports the result for the impact of media coverage of negative ESG issues of a firm and analyst cash flow forecast accuracy 1 quarter ahead. In Column 1, the coefficient on Current RRI is not significant. However, the coefficient on Peak RRI (-0.001, standard errors=0.000, p-value=0.0566) in Column 2 and the coefficient on RRI Trend (-0.002, standard errors=0.001, p-value=0.0916) are negative and significant. This indicates that a firm's media coverage of ESG issues is negatively associated with the accuracy of analyst cash flow forecast 1 quarter ahead, consistent with H1.

| Insert Table 20 here |

Table 21 reports the result for the impact of media coverage of negative ESG issues of a firm and analyst cash flow forecast accuracy 2 quarter ahead. In Column 1, the coefficient on Current RRI is not significant. Only the coefficient on Peak RRI (-0.001, standard errors=0.000, p-value=0.0201) in Column 2 and the coefficient on RRI Trend (-0.002, standard errors=0.001, p-value=0.0652) are negative and significant. This provides evidence that a firm's media coverage of ESG issues is negatively associated with the accuracy of analyst cash flow forecast 2 quarter ahead.

| Insert Table 21 here |

4.3.6 Propensity Score Matching model

I use the PSM to control for differences in firm characteristics between high ESG risk firms and low ESG risk firms. Table 22A presents the first-stage regression of the PSM model,

all the variables are used to determine a high-ESG-risk firm[9]. Most of the variables of each model are significant, suggesting that these are the strong determinants of a firm which is exposed to high level of CSI coverage.

Table 22B presents the results of the second-stage regression of the PSM model in for the propensity score matching sample based on Equation (5). According to Column 1, the coefficient on Current RRI_PSM is negative and significant (-0.1313, standard errors=0.0267, p-value=0.000), suggesting that analysts cash flow forecast accuracy for a firm is decreased when the firm is exposed to higher current level of media and stakeholder exposure related to ESG issues. In Columns 2 and 3, the independent variable of interests Peak_RR_PSM (-0.1181, standard errors=0.0261, p-value=0.000) and RRI_Trend_PSM (-0.1263, standard errors=0.0263, p-value=0.000) are also highly significant. This is consistent with the prior results for the main regression models that analysts cash flow forecast accuracy for a firm is negatively associated with the firm's higher level of media and stakeholder exposure related to ESG issues.

| Insert Table 22A here |

| Insert Table 22B here |

4.3.7 Heckman Model

I also use the Heckman's two stage regression to mitigate the potential endogeneity concern. Table 23A presents the results for the first-stage regression of Heckman's two-stage

[9] For my propensity-score matching, I choose pair-matching without replacement within a specified caliper distance. This approach enables pairs of treated and untreated subjects to be generated such that the difference in propensity scores between matched subjects is at most a fixed distance (the caliper width) (Austin, 2011). Using narrower calipers will lead to the matching of more similar subjects, reducing bias by decreasing systematic differences between matched treated and untreated subjects (Austin, 2011). I choose 0.10 as caliper distance for the propensity score matching.

models on Equation (6). The significant variables AGE and RD indicate that a firm's media coverage of ESG issues is positively associated with its firm age and is negatively associated with the R&D intensity in the firm. The self-selection parameter LAMBDA is calculated using the estimated parameters from the first-stage probit regression model and is added as an additional explanatory variable in the second-stage OLS regression model.

Table 23B presents the results for the second-stage regression of Heckman's two-stage models on Equation (6). In Column 1, the coefficient on Current RRI is negative and significant (-0.0003, standard errors=0.0002, p-value=0.0779). This indicates that analysts cash flow forecast for a firm is less accurate when the firm is exposed to higher current level of media and stakeholder exposure related to ESG issues. The coefficient on Peak RRI is negative and significant (-0.0003, standard errors=0.0001, p-value= 0.0586), suggesting that analysts cash flow forecast for a firm is less accurate when the firm is exposed to a higher level of highest reputational risk exposure from media and stakeholders over the last 2 years. These results are consistent with the prior results for the main CFFA regression models.

| Insert Table 23A here |

| Insert Table 23B here |

4.4 Liquidity Risk Models

4.4.1 Model to test Hypothesis H4a

H4a examines the impact of media coverage of negative ESG issues on liquidity risk. Table 24 report the results for the regression of liquidity risk on each of the ESG indices based on Equation (11). In Column (1), the independent variable of interest is Current RRI. The coefficient on Current RRI is positive and significant (0.0006, standard errors=0.0002, p-

value<0.0001), indicating that liquidity risk of a firm is higher when the firm has higher current level of media and stakeholder exposure related to ESG issues. This result supports the prediction in H4a. I find that liquidity risk is lower when a firm has higher market capitalization (SIZE), higher arbitrage risk (ARBITRAGE_RISK), shorter operating cycle (OPERATING_CYCLE), and lower level of capital intensity (CAPITAL_INTENSITY). In Column (2), the independent variable of interest is Peak RRI. The positive and significant coefficient on Peak RRI (0.0005, standard errors=0.0001, p-value<0.0001) indicates that liquidity risk of a firm is higher when the firm has higher level of the highest reputational risk exposures related to ESG issues over the last two years. This result is consistent with the prediction in H4a. In Column (3), the independent variable of interest is RRI Trend. The positive and significant coefficient on RRI Trend (0.0006, standard errors=0.0002, p-value<0.0001) indicates that liquidity risk of a firm is higher when the RRI of a firm increases between current date and the 30 days ago. This result holds for H4a. The results for other control variables are similar to those in Columns (1) and (2). Overall, the results provide evidence consistent with H4a.

Insert Table 24 here

4.4.2 Model to test Hypothesis H4b

H4b examines the role of analyst decision to issue a cash flow forecast in relation to media coverage of negative ESG issues and liquidity risk. Table 25 reports the result for the regression based on Equation (12). In all three columns, the coefficient on each RRI is still positive and significant, indicating that media coverage of negative ESG issues is positively associated with liquidity risk. However, the coefficient on the interaction term

CurrentRRI_DCF, PeakRRI_DCF or RRITrend_DCF is not significant. This result is consistent with the prediction in H4b. I find that analyst's decision to issue a cash flow forecast does not play a role in the relation between media coverage of ESG issues and liquidity risk.

| Insert Table 25 here |

4.5 Interaction Effects

4.5.1 Litigation Risk as Sensitivity Test 1

Firms who face more litigation risk in their investment projects may choose to make more CSR investments. These firms may use more CSR engagement as insurance against future litigation risks associated with ESG issues than those who face less litigation risk (Chang et al. 2018). Following Chang et al. (2018), I use two steps to measure litigation risk. First, I classify firms into subsamples with high and low litigation risk based on the industry they operate in. I create an indicator variable, Litigation_Risk, which is defined as one if a firm is in litigious industries (i.e., Chemicals, Industrial and Commercial Machinery, Electronic and other Electrical Equipment, Retail Trade), and zero otherwise. The variable Litigation_Risk is added to interact with each of the ESG_INDEX variables in my main models. I predict that firms with higher litigation risks may invest more in CSR and signal the market by providing more CSR disclosures, reducing the information asymmetry between the firms and stakeholders including investors. This may suggest that firms who face higher litigation risk choose to make more CSR investment to reduce the impact of stakeholder sanctions (Godfrey 2005). More CSR engagements may incentivize firms to disclose more CSR disclosures. More CSR disclosures give analysts opportunities to process, analyze and create new information in the market, which

may increase the propensity of issuing cash flow forecasts and the accuracy of cash flow forecasts.

4.5.1.1 Results for the DCF Model

Table 26 presents the result of the role of litigation risk on a firm's media coverage of negative ESG issues on analyst's decision to issue a cash flow forecast. In Column 1, the coefficient on Current RRI is negative and significant (-0.0007, standard errors=0.0002, p-value=0.0008), consistent with prior results. This shows that analysts are less likely to issue cash flow forecasts when firms receive higher level of CSI coverage. The coefficient on Current RRI_Litigation_Risk is positive and significant (0.0017, standard errors=0.0005, p-value=0.0004), indicating that firms who are exposed to higher CSI coverage and higher litigation risk are associated with higher propensity of being issued a cash flow forecast. In Column 2, the coefficient on Peak RRI remains negative and significant (-0.0006, standard errors=0.0002, p-value=0.0005), consistent with prior results. The coefficient of Peak RRI_Litigation _Risk is positive and significant (0.0013, standard errors=0.0003, p-value=0.0003). In Column 3, the coefficient on RRI Trend remains negative and significant (-0.0005, standard errors=0.0002, p-value=0.0298). The coefficient of RRI_Trend_Litigation_Risk is positive and significant (0.0014, standard errors=0.0005, p-value=0.0039). In all three columns, I find that firms with higher litigation risk are more likely to be issued a cash flow forecast, as indicated by the positive and significant coefficient on Litigation_Risk.

| Insert Table 26 here |

4.5.1.2 Results for the CFFA Model

Table 27 presents the result of the role of litigation risk on a firm's media coverage of negative ESG issues on analyst cash flow forecast accuracy. In Column 1, the coefficient on Current RRI remains negative and significant (-0.003, standard errors=0.001, p-value=0.0552), consistent with prior results. The coefficient of Current_RRI_Litigation_RISK is positive and significant (0.002, standard errors=0.001, p-value=0.0981), indicating that firms who are exposed to higher CSI coverage and higher litigation risk are associated with higher analyst cash flow forecast accuracy. This may suggest that firms who face higher litigation risk choose to make more CSR investment to reduce the impact of stakeholder sanctions (Godfrey 2005). More CSR engagement may incentivize firms to disclose more CSR disclosures, which reduces information asymmetry. Reduced information asymmetry may thus help analysts forecasting of cash flows. In Column 2, the coefficient on Peak RRI remains negative and significant (-0.001, standard errors=0.001, p-value=0.0721), consistent with prior results. The coefficient of Peak_RRI_Litigation_RISK is positive but not significant (0.002, standard errors=0.001, p-value=0.1006). In Column 3, the coefficient on RRI Trend remains negative and significant (-0.003, standard errors=0.002, p-value=0.0531), consistent with prior results. The coefficient of RRI_Trend_Litigation_RISK is positive but not significant (0.002, standard errors=0.001, p-value=0.0935).

| Insert Table 27 here |

4.5.1.3 Results for the Litigation Risk Model

Table 28 presents the result of the role of litigation risk on a firm's media coverage of negative ESG issues on the firm's liquidity risk. In Column 1, the coefficient on Current RRI is positive and significant (0.0006, p-value=0.0003), consistent with the prediction in H4a. Column 2 and 3 show similar results. These results indicate that firms that receive higher CSI coverage

face higher accounting-related liquidity risk, consistent with H4a. However, I do no find that high-ESG-risk firms with higher litigation risk are associated with accounting-related liquidity risk, as indicated by the insignificant coefficient on Current_RRI_Litigation_RISK. Similarly, in Column 2 and 3, I do not find evidence that firms that receive higher CSI coverage face higher accounting-related liquidity risk as the coefficients on Peak_RRI_Litigation_RISK and RRI_Trend_Litigation_RISK are not significant.

| Insert Table 28 here |

Table 29 presents the result of the role of litigation risk on the effect of cash flow forecasts and the impact of a firm's media coverage of negative ESG issues on accounting-related liquidity risk of the firm. In Column 1, I find that firms with higher CSI coverage and higher litigation risk face higher liquidity risk as the coefficient estimate of each of the interaction term between ESG index and litigation risk is positive and significant (ESG_LITIGATION_RISK). However, in Column 1, the coefficient on Current_RRI_DCF_Litigation_RISK is negative and significant (-0.0017, standard errors=0.0008, p-value=0.0805), indicating that analyst's decision to issue a cash flow forecast marginally reduces the relation between a high-litigation-risk firm's CSI coverage and accounting-related liquidity risk. Similar evidence is found in the results for Column 3, as indicated by the negative and significant coefficient on RRI_Trend_DCF_Litigation_RISK (-0.0021, standard errors=0.0009, p-value=0.0529). These results suggest that analysts help reduce the information asymmetry between high-litigation-risk firms and investors through their issuance of cash flow forecasts, thereby reducing accounting-related liquidity risk.

| Insert Table 29 here |

4.5.2 HHI as Sensitivity Test 2

Next, I examine whether corporate governance helps analyst make better cash flow forecasts when media coverage of negative ESG issues is disseminated to the equity market. Corporate governance is an important mechanism in reducing agency problems and disciplining the managerial behaviors. According to Shleifer and Vishny (1997), product market competition could be the most powerful mechanism in disciplining managers. Chen et al. (2015) also shows that the value-destroying activities induced by loss of financial analyst could be decreased by stronger product market competition. Dong et al. (2015) suggest that higher product market competition for a firm makes the firm's products be more easily substituted by those of the peer firms, when stakeholders criticized the firms' ESG practices in public. They find that the relationship between reduction in analyst coverage and corporate irresponsible behavior are driven by firms operating in concentrated industries. I predict that analysts' monitoring role become more important for firms with more concentrated product market structure (i.e., less competitive) due to weaker corporate governance than those with more competitive market structure. Following Dong et al. (2015) to measure product market competition level, I calculate the industrial Herfindal-Hirschman Index (HHI). For each two-digit SIC industry, j, the concentration level of the sales for each year t is calculated. A high HHI indicates that the industry is more concentrated and is less competitive.

4.5.2.1 Results for the DCF Model

Table 30 presents the result for the DCF model that examines the role of HHI on the effect of a firm's media coverage of ESG issues and analyst's decision to issue a cash flow forecast. In Column 1, the coefficient on Current RRI is negative and significant (-0.0012,

standard errors=0.0003, p-value <.0001), consistent with the prediction in H1. Firms who receive higher level of CSI coverage are less likely to be issued a cash flow forecast. The coefficient of Current_RRI_HHI is positive and significant (0.0417, standard errors=0.0085, p-value<.0001), indicating that firms who are exposed to higher CSI coverage and who have greater HHI are associated with higher propensity of being issued a cash flow forecast. In Column 2, the coefficient on Peak RRI remains negative and significant (-0.0009, standard errors=0.0002, p-value<.0001), consistent with prior results. The coefficient of Peak_RRI_HHI is positive and significant (0.0311, standard errors=0.0054, p-value<.0001). In Column 3, the coefficient on RRI Trend remains negative and significant (-0.0010, standard errors=0.0003, p-value<.0001). The coefficient of RRI_Trend_HHI is positive and significant (0.0407, standard errors=0.0085, p-value<.0001). All these results show that analysts provide more cash flow forecasts when firms receiving higher level of CSI coverage have more concentrated product market structure reflected by greater HHI. In all three columns, I also find that firms with great HHI are not associated with the propensity of being issued a cash flow forecast, as indicated by the insignificant coefficient on Herfindahl.

| Insert Table 30 here |

4.5.2.2 Results for the CFFA Model

Table 31 presents the result for the CFFA model that examines the role of HHI on the effect of a firm's media coverage of negative ESG issues on analyst cash flow forecast accuracy. In Column 1, the coefficient on Current RRI remains negative and significant (-0.0044, standard errors=0.0024, p-value=0.0647), consistent with prior results. The coefficient of Current_RRI_HHI is positive and significant (0.0973, standard errors=0.0562, p-value=0.0836), indicating that firms who are exposed to higher CSI coverage and who are less competitive due

to higher HHI are associated with higher analyst cash flow forecast accuracy. In Column 2, the coefficient on Peak RRI remains negative and significant (-0.0018, standard errors=0.0010, p-value=0.0805), consistent with prior results. The coefficient of Peak_RRI_HHI is positive but not significant (0.0438, standard errors=0.0267, p-value=0.1011). In Column 3, the coefficient on RRI Trend remains negative and significant (-0.0044, standard errors=0.0023, p-value=0.0579), consistent with prior results. The coefficient of RRI_Trend_HHI is positive and significant (0.0894, standard errors=0.0495, p-value=0.0713), indicating that firms who are exposed to higher CSI coverage and who are more concentrative and less competitive are associated with higher analyst cash flow forecast accuracy.

| Insert Table 31 here |

4.5.3 Volatile Years as Sensitivity Test 3

Chang et al. (2014) show that institutional CSR (ICSR) strengths are associated with lower firm risk in volatile markets, suggesting that the insurance-like protection from ICSR strengths are more salient and more valuable when markets are more volatile for firms. I investigate whether firms receiving higher CSI coverage are less likely to be evaluated by analysts in volatile markets as higher uncertainty and vulnerability are expected for the firms. Following Chang et al. (2014), High_Vol is set to 1 if the year is during the recession years between 2007 and 2009 and dot.com bubble burst years between 2000 and 2002 and 0 in other years.

4.5.3.1 Results for the DCF Model

Table 32 presents the result on the role of volatile years on the effect of a firm's media coverage of negative ESG issues on analyst's decision to issue a cash flow forecast. In Column 1, the coefficient of Current_RRI_High_Vol is negative and significant (-0.0015, standard errors=0.0004, p-value <.0001), indicating that in volatile years, firms who are exposed to higher CSI coverage are associated with lower propensity of being issued a cash flow forecast. In Column 2, the coefficient of Peak_RRI_High_Vol is negative and significant (-0.0010, standard errors=0.0003, p-value<.0001). In Column 3, the coefficient of RRI_Trend_High_Vol is negative and significant (-0.0012, standard errors=0.0004, p-value=0.0007). These negative estimates show that firms who are exposed to higher CSI coverage in volatile years are associated with lower propensity of being issued a cash flow forecast. In all three columns, the coefficients on Current RRI, Peak RRI and RRI Trend are not significant.

| Insert Table 32 here |

4.5.3.2 Results for the Accounting-related Liquidity Risk Model

Table 33 presents the result of regression examining the effect of a firm's media coverage of negative ESG issues on accounting-related liquidity risk. In Column 1, the coefficient on Current RRI is positive and significant (0.0003, standard errors=0.0002, p-value=0.0601), consistent with the prediction in H4a. This indicates that firms that receive higher CSI coverage face higher accounting-related liquidity risk. In all three columns, I find that firms in volatile years have lower accounting-related liquidity risk, as indicated by the negative and highly significant coefficient on High_Vol. However, I find that firms in volatile years are negatively associated with liquidity risk, as indicated by the negative and significant coefficient on Current_RRI_HighVol (-0.0010, standard errors=0.0006, p-value=0.0914). Similarly, in

Column 3, the coefficient on RRI_Trend_High_Vol is negative and significant (-0.0015, standard errors=0.0006, p-value=0.0121).

| Insert Table 33 here |

Table 34 presents the result of the role of analyst cash flow forecast decision in the effect of a firm's media coverage of negative ESG issues on accounting-related liquidity risk. In Column 1, the coefficient on Current_RRI_DCF_High_Vol is negative and insignificant (-0.0026, standard errors=0.0025, p-value=0.2892). In Column 2 and 3, significant evidence is found in the results, as indicated by the negative and significant coefficient on Peak_RRI_DCF_High_Vol (-0.0026, standard errors=0.0014, p-value=0.0695) and RRI_Trend_DCF_ High_Vol (-0.0068, standard errors=0.0028, p-value=0.0161). These results indicate that analyst's decision to issue a cash flow forecast attenuates the relation between a firm's CSI coverage and liquidity risk when the firms operated in volatile years. In all three columns, I also find that firms in volatile years are associated with lower liquidity risk, as indicated by the negative and significant coefficient on HighVol.

| Insert Table 34 here |

4.5.4 Institutional Ownership as Sensitivity Test 4

Cho et al. (2013) find that the negative association between CSR performance and bid-ask spread declines for firms with a high level of institutional investors compared to those with a low level of institutional investors, suggesting that informed investors may exploit their CSR information advantage. The adverse selection problem exists for less informed investors when it comes to CSR performance. As an important intermediary role, analysts may help mitigate

adverse selection problem by supplying publicly available information to the market (e.g., Lang and Lundholm 1996). I investigate whether institutional ownership affects the relation between CSI coverage and analyst cash flow forecasts. Following Cho et al. (2013), institutional ownership variable InsOwn is measured as the standardized percentage of institutional ownership for firm i at the end of the fiscal year.

4.5.4.1 Results for the CFFA Model

Table 35 presents the result of the regression examining the effect of a firm's media coverage of negative ESG issues on analyst cash flow forecast accuracy. In Column 1, the coefficient on Current RRI remains negative and significant (-0.0079, standard errors=0.0039, p-value=0.0457), consistent with prior results. The coefficient of CurrenRRI_InsOwn is positive and significant (0.0072, standard errors=0.0037, p-value=0.0543), indicating that firms who are exposed to higher CSI coverage and who have higher level of institutional ownership are associated with higher analyst cash flow forecast accuracy. In Column 2, the coefficient on Peak RRI remains negative and significant (-0.0051, standard errors=0.0022, p-value=0.0191), consistent with prior results. The coefficient of Peak_RRI_InsOwn is positive and significant (0.0054, standard errors=0.0023, p-value=0.019), suggesting that analysts tend to generate more accurate cash flow forecasts when the higher-ESG-risk firms they follow have higher level of institutional ownership. In Column 3, the coefficient on RRI Trend remains negative and significant (-0.0102, standard errors=0.0047, p-value=0.0289), consistent with prior results. The coefficient of RRI_Trend_InsOwn is positive but not significant (0.0100, standard errors=0.0046, p-value=0.0285). This result indicates that analyst provide more accurate cash flow forecasts when firms have higher level of institutional ownership.

| Insert Table 35 here |

4.5.5 Firm Risk

Cui et al. (2018) find that firm risk plays a negative mediating role between CSR and information asymmetry. They argue that high-risk firms tend to make more effort to disseminate more information to outside investors by engaging in CSR activities to avoid adverse selection and retain a good reputation, decreasing information asymmetry between insiders and outsiders. Following Cui et al. (2018), firm risk is measured as annual average of the standard deviation of monthly stock returns.

4.5.5.1 Results for the DCF Model

Table 36 presents the result of regressions of each of the ESG indices measured by RepRisk, firm risk (FIRM_RISK), and the interaction term between the two variables (ESG*FIRM_RISK) on analyst decision to issue a cash flow forecast (DCF). According to the analysis, the effect of the interaction term in each column is consistently positive, significant at the 1 percent and 5 percent levels, respectively. The positive coefficient estimates indicate that firms who are exposed to higher CSI coverage and who have higher level of firm risk are associated with higher propensity of being issued a cash flow forecast.

| Insert Table 36 here |

4.5.5.2 Results for the CFFA Model

Table 37 presents the result of regressions of each of the ESG indices measured by RepRisk, firm risk (FIRM_RISK), and the interaction term between the two variables

(ESG*FIRM_RISK) on analyst cash flow forecast accuracy. According to the analysis, the effect of the interaction term in the first and third column is negative and marginally significant. The negative coefficient estimates provide weak evidence that firms who are exposed to higher CSI coverage and who have higher level of firm risk are associated with lower analyst cash flow forecast accuracy. Combining the results above, I find that analysts may be more likely to issue a cash flow forecast for high-risk firms who receive higher level of CSI coverage; however, their forecast accuracy of cash flow forecasts may not be higher. Instead, analysts forecast cash flows less accurately.

| Insert Table 37 here |

4.5.5.3 Results for the Liquidity Risk Model

Table 38 presents the result of the regressions examining the role of firm risk on the effect of a firm's media coverage of negative ESG issues and accounting-related liquidity risk. While the coefficients on ESG indices remain positive and significant, the effect of the interaction term (ESG*FIRM_RISK) in all columns is not significant. This result for firms with higher firm risk are not consistent with H4a. The result indicates that high-risk firms who receive higher level of CSI coverage are not associated with higher liquidity risk, consistent with the notion that high-risk firms tend to provide more information to outside investors by engaging in CSR activities to avoid adverse selection and maintain a good reputation, decreasing information asymmetry between insiders and outsiders. Decreased information asymmetry may reduce investors' incentives to require higher return on the stocks of these firms to be compensated on liquidity risk.

| Insert Table 38 here |

Table 39 presents the result of the regressions examining the role of firm risk on the effect of a firm's media coverage of ESG issues and analyst decision to issue a cash flow forecast on accounting-related liquidity risk. The three-way interaction term (ESG_DCF_FIRM_RISK) is not significant, however, the sign is negative in the first and second column. The coefficients on *DCF_FIRM_RISK* are negative and highly significant respectively, indicating that high-risk firms who are issued a cash flow forecast are negatively associated with accounting-related liquidity risk. This may suggest that investors do not require a higher return on stock of high-risk firms who are issued a cash flow forecast to be compensated on accounting-related liquidity risk.

| Insert Table 39 here |

In summary, I provide evidence that consistent with H1, analyst's decision to issue a cash flow forecast is negatively associated with a firm's media coverage of negative ESG issues. The result holds for my sample excluding financial and utility firms. I also provide evidence that analyst cash flow forecast accuracy decreases when firms experience higher level of media coverage of negative ESG issues, supporting my prediction in H2. The result holds when I exclude financial and utility firms from my sample, and when I use cash flow forecast accuracy 1 quarter and 2 quarter ahead. To mitigate endogeneity concern, I run propensity score matching method and heckman two-stage analyses and find similar results. I also find that accounting-related liquidity risk is positively associated with a firm's media coverage of negative ESG issues, supporting my prediction in H4a. In addition, I show that analyst cash flow forecasts help decrease a firm's accounting-related liquidity risk when the firm is exposed to higher level of

media coverage of their negative ESG practices. I also consider five sensitivity tests to examine whether a firm's media coverage of ESG issues affects analyst cash flow forecasts and the firm's accounting-related liquidity risk. I show that the propensity of being issued a cash flow forecast is higher when a higher-ESG-risk firm has lower litigation risk, when it is operated in a more concentrated and less competitive industry, when markets are less volatile for firms, and when the firm has higher firm risk. I also provide evidence that analyst cash flow forecast is higher when a higher-ESG-risk firm has higher litigation risk, when it is operated in a more concentrated and less competitive industry when the firm has higher level of institutional ownership, and when the firm has lower risk.

Chapter 5 Conclusion

In this dissertation, I examine whether a firm's negative environmental, social and governance (ESG) issues covered by media affects the assessment of the firm's future prospects by financial analysts. Firms respond to external pressures for ESG practices and disclosures by taking actions aimed at external stakeholders as well as those that target shareholders. These actions may help mitigate the risk of potential stakeholders' criticism or to integrate stakeholders' demands and expectations into the firm's operations, structures, and processes (Fiss & Zajac, 2006; Crilly, Zollo, & Hansen, 2012; Neumann, Cennamo, Bettinazzi et al., 2013) and/or reduce the potential for stakeholder sanctions (Kolbel, Busch and Jancso 2017). Analysts provide cash flow forecasts along with earnings forecasts because cash flow information is useful in helping investors interpret earnings (e.g., DeFond & Hung, 2003, 2007; Pae and Yoon 2012; Call, Chen, and Tong 2009, 2013;Hashim and Strong 2018) and researchers argue that cash flow is a better metric than earnings for assessing the liquidity and solvency of a firm (Defond & Hung, 2003; Graham, Harvery, & Rajgopal, 2005). Cash flow forecasts are incrementally useful to earnings in valuing securities (Bowen, Burgstahler, & Daley, 1987; Harris, Lang, & Moller, 1994; Lang et al., 2004; Schipper, 1991; Mohanram 2014; Radhakrishnan and Wu 2014) and serve as an additional monitoring device for firms with poor earnings quality (McInnis and Collins 2011). All prior studies show that CSR disclosure and CSR performance help increase analysts' earnings forecast accuracy and thus reduce information asymmetry in the stock market (e.g., Luo et al. 2014; Bhandari and Kohlbeck, 2018). Thse studies argue that nonfinancial information allows analysts to play in an intermediary role between firms who disclose the nonfinancial information and the market. Lee et al. (2018) find that the supply of ESG information from CSR reporting (i.e. firms' CSR disclosures and third-

party issued CSR information) affect the value of the information disclosed and the extent to which investors demand advice form analysts. I argue that a firm's exposure to CSI coverage on their ESG issues reflect the level of information asymmetry between the firm and other stakeholders (Cormier and Magnan 2017) due to the coverage's negative effect on the firm's future financial performance (Jensen, 2001), increased financial risk (Kolbel et al. 2017), weak social responsibility actions and ethical concerns of management (Kim et al. 2012). Information asymmetry increases uncertainty surrounding the firm's underlying earnings and compromises stakeholders' ability to correctly evaluate and predict the firm's future earnings and performance, thereby incentivizing analysts to issue cash flow forecasts along with earnings forecasts.

I first examine the impact of a firm's CSI coverage on analyst's decision to issue a cash flow forecast for the firm. I find support that a firm's CSI coverage of ESG issues is negatively associated with analyst decision to issue a cash flow forecast. This provides evidence that analysts are less likely to issue a cash flow forecast when a firm has higher CSI coverage. I also find that firm's CSI coverage of ESG issues is negatively related with the firm's analyst cash flow forecast accuracy. I do not find strong evidence that a firm's media coverage of environmental issues, social issues or governance issues is positively related with the firm's analyst cash flow forecast accuracy.

Using accounting-related liquidity risk, I investigate how investors affect the equity market when they receive negative information about a firm's ESG issues covered by the media. I find support that a firm's media coverage of ESG issues is positively related with accounting-related liquidity risk, indicating that investors may expect higher compensation for liquidity risks that they bear when they invest in firms which receive higher CSI coverage. I also find that

analyst's decision to issue a cash flow forecast does not play a role in the relation between media coverage of ESG issues and accounting-related liquidity risk.

I also examine various sensitivity tests in which a firm's CSI coverage may affect analyst cash flow forecasts as sensitivity tests.

The first sensitivity test is a firm's litigation risk. Firms who face more litigation risk in their investment projects may choose to make more CSR investment. These firms may use more CSR engagement as insurance against future litigation risks associated with ESG issues than those who face less litigation risk (Chang et al. 2018). I find that firms with higher litigation risk are more likely to be issued a cash flow forecast and are associated with higher analyst cash flow forecast accuracy. These results are consistent with the notion that high-litigation-risk firms may engage in more CSR activities, which reduces information asymmetry and thus helps analysts forecast cash flows. I also find weak evidence that analysts help reduce the information asymmetry between high-litigation-risk firms and investors through their cash flow forecasts, thereby reducing liquidity risk.

I consider other two sensitivity tests in which a firm's CSI coverage affects analyst cash flow forecasts accuracy: product market concentration and institutional ownership. My result shows that firms who are exposed to higher CSI coverage and who are more concentrative and less competitive are associated with higher analyst cash flow forecast accuracy. This indicates that analysts' monitoring role become more important for firms with more concentrated product market structure (i.e., less competitive) due to weaker corporate governance than those with more competitive market structure. My result also shows that analysts provide more accurate cash flow forecasts when firms receiving higher CSI coverage have higher level of institutional ownership.

Another sensitivity test is volatile years. Chang et al. (2014) show that institutional CSR (ICSR) strengths are associated with lower firm risk in volatile markets. My result shows strong evidence that firms in volatile years are negatively associated with accounting-related liquidity risk. This may indicate that institutional CSR (ICSR) activities engaged by firms who receive high CSI coverage provide insurance-like protection which is more salient and more valuable when markets are more volatile for firms, thus reducing liquidity risk.

Cui et al. (2018) find that firm risk plays a negative a mediating role between CSR and information asymmetry. Following Cui et al. (2018), firm risk is measured as annual average of the standard deviation of monthly stock returns. I provide evidence consistent with the notion that high-risk firms tend to make more effort to disseminate more information to outside investors by engaging in CSR activities to avoid adverse selection and retain a good reputation, decreasing information asymmetry between insiders and outsiders. Specifically, I find that firms who receive higher level of CSI coverage and who have higher level of firm risk are associated with higher propensity of being issued a cash flow forecast by analysts. I also find their forecast accuracy of cash flow forecasts for high-risk firms who receive higher level of CSI coverage may be lower. In addition, high-risk firms who receive higher level of CSI coverage are not associated with higher liquidity risk. Decreased information asymmetry may reduce investors' incentives to require higher return on the stocks of these firms to be compensated on liquidity risk.

This dissertation has several limitations. Frist, RepRisk database is developed by the third-party organization which possess secretive information on how the media coverage of ESG issues surrounding the firms are measured. It is not known whether the process of measuring news items is transparent and reliable. In this dissertation, I did not test the internal validity of

the index measure of media coverage developed by RepRisk. However, Burke et al. (2019) validates the measurement of the continuous index measure of media coverage of ESG issues. Second, I did not explore positive media coverage of ESG practices of firms. Future research can consider whether analysts incorporate positive media coverage of ESG practices as an important factor when making assessment of the firms' future performance.

This dissertation contributes to the extant literature in several ways. First, this dissertation adds to the literature on usefulness of analyst cash flow forecasts (e.g., DeFond and Hung, 2003; Givoly et al., 2009; McInnis and Collins, 2011; Yoo and Pae, 2011; Pae and Yoon, 2012; Call et al., 2013) by exploring the impact of media coverage of ESG issues on the incidence of analyst cash flow forecasts and analyst cash flow forecast accuracy. Adding to this line of research, my dissertation gives insights into the role of media coverage of ESG issues on analysts' cash flow forecasting. To the best of my knowledge, this is the first study that links CSR-related information to analyst cash flow forecasts.

Second, my dissertation contributes to the existing research studies on the value relevance of CSI coverage of media by showing that analysts play an important role in processing ESG issues reported by the media and use them in their analyses about a firm's future financial performance and earnings growth. This dissertation explores on whether and how CSI coverage drives the demand-or-supply-side forces of analysts' products and enhances the understanding of a media-based measure of CSI which is gained limited attention in academic research. Different from an aggregated CSR rating, the media-based indicator is more dynamic with respect to different weights assigned to categories of CSR based on media attention and reflects the relevance of firm's exposure to criticism reported by its stakeholders (i.e. media coverage of CSI) on ESG practices for financial analysts. I show that analysts are less likely to

issue cash flow forecasts and cash flow forecasts are less accurate when firms receive higher level of CSI coverage. I directly perceive firms' negative environmental, social and governance-related issues released by media coverage as I believe that these issues of different dimensions are salient to market participants in the capital markets about firms' CSR performance, management integrity and ethics, governance and information dynamics.

My dissertation also explores the connection between CSR performance and information asymmetry by examining the relation between CSI coverage and accounting-related liquidity risk. The idea is if media coverage of ESG issues provides useful information to investors in general, investors should be responsive to these CSI coverage in their trading in the shares of the firms that exhibit different level of media coverage of ESG issues, which in turn affect the stock market liquidity in the firms' shares. My dissertation answers whether media coverage of ESG issues provides benefits to investors by increasing the supply of negative CSR-related information to the public and thus reducing information asymmetry in the equity market. I find strong evidence that investors are compensated for higher return due to higher accounting-related liquidity risk surrounding firms who are exposed to more negative ESG issues, indicated by the positive relationship between CSI coverage and accounting-related liquidity risk. This may imply that firms who receive media CSI coverage are perceived as having poorer information quality by investors and thus higher information asymmetry between the firms and their stakeholders.

My findings should be of interest to managers, regulators, and investors if they strive to assess a firm's media coverage of ESG issues.

Appendix I: RepRisk Scope of ESG issues

RepRisk categories	Issues
Environmental Footprint	Global pollution and Climate change
	Local pollution
	Impact on ecosystems and Landscapes
	Overuse and Wasting of resources
	Waste issues
	Animal mistreatment
Community Relations	Human rights Abuses, corporate complicity
	Impact on communities
	Local participation issues
	Social discrimination
Employee Relations	Forced labor
	Child labor
	Freedom of association and collective bargaining
	Discrimination in employment
	Health and safety issues
	Poor employment conditions
Corporate Governance	Corruption, bribery, extortion, money laundering
	Executive Compensation
	Misleading communication, e.g., greenwashing
	Fraud
	Tax evasion
	Anti-competitive practices
Product-portfolio Related Risks	Controversial products and services
	Products (health and environmental issues)
Generally applicable in addition to one of the above	Violation of international standards
	Violation of national legislation
	Supply chain (Environmental, social and legal issues)

ESG risk proxy		Definition
RRI		The RepRisk Index (RRI) is RepRisk's proprietary algorithm that captures and measures reputational risk exposure associated with ESG issues.
Current RRI		The Current RRI denotes the current level of media and stakeholder exposure of a company related to ESG issues The RRI varies between zero (lowest) and 100 (highest). The higher the value, the higher the risk exposure: 0-25 = low risk exposure 26-50 = medium risk exposure 51-75 = high risk exposure 76-100 = very high risk exposure NOTE: An RRI of -1 means that the RRI never went above 0 (i.e. RepRisk has captured no ESG-related risk incidents for the company). An RRI of 0 means that it was once above 0 (i.e. RepRisk has captured risk incidents for the company), however, the RRI has since decayed. The RRI declines to zero over a maximum period of two years. Most large multinational firms have an RRI ranging between 26 and 50. Firms that are extremely exposed reach the threshold of 76 to 100.
RRI Trend		Difference in the RepRisk Index (RRI) between current date and the date 30 days ago. RRI Trend or change monitors the progress of the risk exposure of a company related to ESG issues, or as an indication of when a risk incident has occurred for a company.

Peak RRI		Peak RepRisk Index (RRI) represents the highest level of reputational risk exposure related to ESG issues over the last 2 years. It shows the overall ESG-related reputational risk exposure is the main metric used in analyzing the risk exposure of a company. The RRI ranges from zero (lowest) to 100 (highest). The higher the value, the higher the risk exposure: 0-25 = low risk exposure 26-50 = medium risk exposure 51-75 = high risk exposure 76-100 = very high risk exposure NOTE: It is expected that most large multinationals have an RRI between 26-50, due to their global footprint and salience vis-à-vis media and stakeholders. Firms that are extremely exposed reach the threshold of 76 to 100.

Subtract from Reprisk database at: https://wrds web.wharton.upenn.edu/wrds/support/Data/_001Manuals%20and%20Overviews/_180RepRisk/RepRisk%20-%20Guidance%20on%20data%20packages%20and%20elements%20Jan%202017%20version.pdf

Appendix II Variables Definitions

Cash Flow Forecast Issuance Model	
DCF	DCF is an indicator variable that is valued as one if this is at least one quarter cash flow forecast issued by analysts during the fiscal quarter, and zero otherwise.
ESG_INDEX	Current RRI, Peak RRI or RRI trend from RepRisk database
CFO_VOL	The firm-specific standard deviation of the operating cash flows divided by lagged assets. Previous 8 years are used to calculate the standard deviation with the minimum requirement of 4 years
CFO	Operating cash flows divided by average total assets
ABS_ACCRUAL	The absolute value of earnings minus operating cash flows divided by average total assets. Earnings are income before extraordinary items.
CAP_INT	Gross property, plant, and equipment (Gross PP&E) divided by average assets.
ALTMAN_Z	1.2 (net working capital / total assets) + 1.4 (retained earnings / total assets) + 3.3 (earnings before interest and taxes / total assets) + 0.6 (market value of equity / book value of liabilities) + 1.0 (sales / total assets).
SIZE	The natural logarithm of one plus the equity market capitalization.
ANALYST_FOLLOWING	The natural log of one plus the number of analysts following the firm
BM	Equity book value divided by equity market value
AGE	Firm age
DLOSS	An indicator variable equal to one if earnings before extraordinary and discontinued operation is negative and zero otherwise
FIN_CRISIS	An indicator for the recent financial-crisis period (FIN_CRISIS)
INDUSTRY_DUMMIES	Industry dummies based on SIC classification
YEAR_DUMMIES	Calendar-year dummies
Cash Flow Forecast Accuracy Model	

CFFA	Cash flow forecast accuracy for firm j in year t, measured by the negative one multiplied by the absolute cash flow forecast error (CFCRROR). CFCRROR is the absolute value of the difference between the actual and forecasted cash flows per share in quarter t.
ESG_INDEX	Current RRI, Peak RRI or RRI trend from RepRisk database
CFO_VOL	The firm-specific standard deviation of the operating cash flows divided by lagged assets. Previous 8 years are used to calculate the standard deviation with the minimum requirement of 4 years.
CFO	Operating cash flows divided by average total assets
HORIZON	The difference (in days) between the earnings announcement date and the forecast issuance date
SIZE	The natural logarithm of one plus the equity market capitalization.
BM	Equity book value divided by equity market value
LEV	The book value of debt divided by book value of equity.
INDUSTRY_DUMMIES	Industry dummies based on SIC classification
YEAR_DUMMIES	Calendar-year dummies
Variables for Propensity-Score Matching Model	
ESG_INDEX_PSM	Indicator variable set to 1 if the firm is assigned with ESG_INDEX is higher than the sample mean and 0 if the firm is assigned with ESG_INDEX is lower than or equal to the sample mean.
LNASSETS	The natural log of total assets
LEVERAGE	The ratio of total liabilities to total assets
LNSEGS	Log of number of business segments
LOSS	Indicator variable that equals 1 if net income (NI) in year t is less than 0, and 0 otherwise
RD	Research and development intensity measured as total research and development expense divided by the total assets
RET_SD	The standard deviation of monthly returns over the previous three years

ROA	Net income before extraordinary items divided by the total debt plus total market value of the equity
HHI	Herfindahl–Hirschman Index calculated by summing the squares the market share of each firm competing in an industry
DSPECIAL	Indicator set to 1 if magnitude of special items (SPI) is greater than zero, 0 otherwise
DFOREIGN	Indicator variable set to 1 if the firm engages in foreign operations based on nonzero pretax foreign income (PIFO—pretax income foreign), 0 otherwise
DMERGER	Indicator variable set to 1 if the firm is engaged in a merger or acquisition in the current year as denoted in Compustat footnote data (SALE_FN) and 0 otherwise
INDUSTRY_DUMMIES	Industry dummies based on SIC classification
YEAR_DUMMIES	Calendar-year dummies
Heckman's Two Stage Analysis	
ESG_INDEX_HIGHIR	Indicator where ESG_INDEX is converted using the sample median. If ESG_INDEX is higher than the sample median, the indicator is 1, 0 otherwise.
AGE	Firm age
RD	Research and development intensity measured as total research and development expense divided by the total assets
AD	Advertising intensity measured as the total advertising expense divided by the total sales
INDUSTRY_DUMMIES	Industry dummies based on SIC classification
YEAR_DUMMIES	Calendar-year dummies
Liquidity Risk Model	
Liquidity Level Measure	
NZero12	Number of days with zero trading volume in the prior year
Turnover12	Daily turnover aggregated over the prior year; daily turnover is the number of shares traded on a day divided by the number of shares outstanding
NoTD12	Total number of trading days in the market over the prior year; 279 is the average number

	of annual trading days during the sample period
Deflator	11,000, following Liu (2006), who chose the value because it is greater than 1/Turnover12 for all sample stocks
Liu (2006)'s CAPM Model	
$E(Rm_t)$	Expected return on the market portfolio
$E(LIQ_t)$	Expected value of the mimicking liquidity factor, LIQ
bM_t	Firm i's market beta
bL_t	Firm i's liquidity beta
Liquidity Risk Model	
Liquidity_Risk	The liquidity beta from estimation of the liquidity-augmented CAPM model (Liu 2006) using monthly stock return data from nine months before to three months after the fiscal year-end for each firm-year
ESG_INDEX	Current RRI, Peak RRI or RRI trend from RepRisk database
DCF	DCF is an indicator variable that is valued one if at least one quarter or annual cash flow forecast issued by analysts during the fiscal year or quarter, and zero otherwise.
SIZE	Natural log of the market value of equity, calculated as the product of the number of common shares outstanding and the closing stock price at the end of the year
ILLIQUIDITY	Natural log of 12-month illiquidity measure (Liu 2006)
TURNOVER	Stock turnover, measured as the average ratio of monthly trading volume to the number of shares outstanding in the year
RETURN_MOMENTUM	Return momentum, measured as cumulative returns over months t-12 through t-2
MARKET_BETA	Market beta measured over 60 months prior to the earnings announcement date
ARBITRAGE_RISK	Arbitrage risk, calculated as the standard deviation of the residual from a market model regression of the stock's monthly returns on the S&P 500 monthly returns over 48 months ending one month before the earnings

	announcement (Wurgler and Zhuravskaya 2002; Mendenhall 2004)
SALES_GROWTH	The change in sales over the prior year, calculated as $(sale_t - sale_{t-1})/sale_{t-1}$ from COMPUSTAT
OPERATING_CYCLE	The natural log of operating cycle, calculated as $(rect_t + rect_{t-1})/ sale_t \times 360 + (invt_t + invt_{t-1})/cogs_t \times 360$, where rect is accounts receivable, invt is inventory, and cogs is costs of goods sold from COMPUSTAT
CAPITAL_INTENSITY	The level of fixed assets in place, measured as the ratio of net plant, property, and equipment to total assets (ppent/at from COMPUSTAT)
CASH_RATIO	The ratio of cash and cash equivalent to the current liability, calculated as che/lct from COMPUSTAT
LOSS	An indicator variable that equals one if the firm has negative earnings before extraordinary items (ib) from COMPUSTAT and zero otherwise
BTM	The natural log of the ratio of book value of equity to market value of equity at the beginning of the fiscal year, calculated as log (ceq/ (prcc_f x csho)) from COMPUSTAT
Accrual Quality Variables	
TCA_{it}	Total current accruals for firm i in year t, computed as $(\Delta CA_{it} - \Delta CL_{it} - \Delta Cash_{it} + \Delta STDEBT_{it})$
CFO_{it}	Cash flow from operations for firm i in year t, computed as $(NIBE_{it} - TA_{it})$, or obtained from the cash flow statement (oancf - xidoc) for sample firms after 1987
$NIBE_{it}$	Net income before extraordinary items (ib) for firm i in year t
TA_{it}	Total accruals for firm i in year t, computed as $(\Delta CA_{it} - \Delta CL_{it} - \Delta Cash_{it} + \Delta STDEBT_{it} - DEPN_{it})$ or as (ib – oancf + xidoc) for sample firms after 1987
ΔCA_{it}	Change in current assets (act) for firm i from year t-1 to year t
ΔCL_{it}	Change in current liabilities (lct) for firm i from year t-1 to year t

$\Delta Cash_{it}$	Change in cash and short-term investments (che) for firm i from year t-1 to year t
$\Delta STDEBT_{it}$	Change in debt in current liabilities (dlc) for firm i from year t-1 to year t
$DEPN_{it}$	Depreciation and amortization expense (dp) for firm i in year t
$\Delta Sales_{it}$	Change in revenues (sale) for firm i from year t-1 to year t
PPE_{it}	Gross value of property, plant and equipment ($ppeg_t$) for firm i in year t
Supplemental Variables	
Sum_Environment_Covered	Number of environmental issues covered
Sum_Social_Covered	Number of social issues covered
Sum_Governance_Covered	Number of governance issues covered
Sum_Environment_Low_Reach	=1 if an environmental issue is covered by a high reach media outlet and zero otherwise
Sum_Environment_Medium_Reach	=1 if an environmental issue is covered by a medium reach media outlet and zero otherwise
Sum_Environment_High_Reach	=1 if an environmental issue is covered by a low reach media outlet and zero otherwise
Sum_Social_High_Reach	=1 if a social issue is covered by a high reach media outlet and zero otherwise
Sum_Social_Medium_Reach	=1 if a social issue is covered by a medium reach media outlet and zero otherwise
Sum_Social_Low_Reach	=1 if a social issue is covered by a low reach media outlet and zero otherwise
Sum_Governance_High_Reach	=1 if a governance issues is covered by a high reach media outlet and zero otherwise
Sum_Governance_Medium_Reach	=1 if a governance issues is covered by a medium reach media outlet and zero otherwise
Sum_Governance_Low_Reach	=1 if a governance issues is covered by a low reach media outlet and zero otherwise
Sum_Environment_Low_Severity	=1 if an environmental issue is of high severity and zero otherwise
Sum_Environment_Medium_Severity	=1 if an environmental issue is of medium severity and zero otherwise
Sum_Environment_Low_Severity	=1 if an environmental issue is of low severity and zero otherwise
Sum_Social_High_Severity	=1 if a social issue is of high severity and zero otherwise
Sum_Social_Medium_Severity	=1 if a social issue is of medium severity and zero otherwise

Sum_Social_Low_Severity	=1 if a social issue is of low severity and zero otherwise
Sum_Governance_High_Severity	=1 if a governance issues is of high severity and zero otherwise
Sum_Governance_Medium_Severity	=1 if a governance issues is of medium severity and zero otherwise
Sum_Governance_Low_Severity	=1 if a governance issues is of low severity and zero otherwise

Appendix III Measures of Accounting Quality

Three Proxies for Accounting Quality

Following Chen et al. (2017), I use three proxies for accounting quality: (i) accruals quality (Accruals_Quality) developed in Dechow and Dichev (2002) and modified in McNichols (2002) and Francis et al. (2005), (ii) absolute value of performance-adjusted abnormal accruals (|Abnormal_Accruals|) based on Kothari et al. (2005), and (iii) income smoothing (Income_ Smoothing) developed by Tucker and Zarowin (2006). Following Francis et al. (2005), I estimate Accruals_Quality as follows:

$$TCA_{it} = \varphi_0 + \varphi_1 CFO_{it-1} + \varphi_2 CFO_{it} + \varphi_3 CFO_{it-1} + \varphi_4 \Delta Sales_{it} + \varphi_5 PPE_{it} + \vartheta_{it} \quad \text{(A1)}$$

All the variables in model (A1), except the intercept, are scaled by average assets. The regression is estimated cross-sectionally for each of the 48 industry groups defined in Fama and French (1997). Accruals_Quality for firm i in year t is defined as the standard deviation of firm i's unexplained current accruals (i.e., the residuals from the annual cross-sectional industry regressions) over the last five years. A larger value of Accruals_Quality suggests greater variability in accruals in mapping into cash flow realizations in concurrent and adjacent time periods, so a larger Accruals_Quality indicates lower accounting quality. I also use an alternate measure of uncertainty in accruals |Abnormal_Accruals| developed by Francis et al. (2005). The second accruals quality is the absolute value of abnormal accruals generated by the Jones (1991) model adjusted for the firm's operating performance (Kothari et al. 2005):

$$TA_{it} = \alpha_0 + \alpha_1 \Delta Sales_{it} + \alpha_2 PPE_{it} + \alpha_3 ROA_{it} + \varepsilon_{it} \quad \text{(A2)}$$

where ROA_{it} equals return on assets for firm i in year t, computed as (ib_{it}/at_{it_1}). In model (A2), all variables (including the intercept) are scaled by total assets at the beginning-of-year t. I estimate the model cross-sectionally for each of the 48 industry groups defined in Fama and

French (1997). The fitted value of model (A2) is normal accruals (*Normal_Accruals*) and the residual is abnormal accruals (*Abnormal_Accruals = TA – Normal_Accruals*). The absolute value of Abnormal_Accruals is my second proxy for accruals quality, with larger values of |Abnormal_Accruals| indicating lower accounting quality.

The third proxy for accounting quality captures the extent to which firms engage in income smoothing. Smoother earnings are likely to be more precise and of higher quality. Following Tucker and Zarowin (2006), I use the correlation between the change in discretionary accruals and the change in prediscretionary income over the past five years (*Income_Smoothing*) to infer income smoothing. A larger correlation between the change in discretionary accruals and the change in prediscretionary income suggests more volatile earnings, lower precision of earnings signal, and lower accounting quality. My measure of discretionary accruals is Abnormal_Accruals from model (A2) and prediscretionary income is calculated as the difference between total income (NIBE) and Abnormal_Accruals.

Table 1 Sample Selection

	DCF Model	CFFA Model	Liquidity Risk Model
All Compustat observations from 2007 to 2016	68,778	68,778	68,778
Add: RepRisk data	379,807	379,807	379,807
Matched Compustat and RepRisk observations	62,495	62,495	62,495
Add: IBES data	236,501	236,501	236,501
Matched Compustat, RepRisk and Institutional Ownership observations	52,575	52,575	52,575
Add Institutional Ownership observations	139,015	139,015	139,015
Matched Compustat, RepRisk, Institutional Ownership and IBES observations	37,195	37,195	14,335
Add Liquidity data			71,789
Matched Compustat, RepRisk, Institutional Ownership, IBES and Liquidity beta observations			26,908
Total observations used in the main multivariate analyses	17,831	2,780	4,693

Table 1 presents sample selection for the main models used to test main hypotheses.

Table 2 Descriptive Statistics for the DCF Model

Variable	N	Mean	Median	Std Dev	Minimum	Maximum	25th Pctl	50th Pctl	75th Pctl
CURRENT_RRI	37195	9.460	0.000	13.214	-1.000	81.000	-1.000	0.000	20.000
PEAK_RRI	37195	17.609	22.000	17.825	-1.000	83.000	-1.000	22.000	32.000
RRI_TREND	37195	9.377	0.000	13.205	-1.000	74.000	-1.000	0.000	20.000
DCF	37195	0.550	1.000	0.498	0.000	1.000	0.000	1.000	1.000
CFO_VOL	37139	0.045	0.036	0.068	0.000	6.562	0.021	0.036	0.055
CFO	36659	0.044	0.035	0.101	-9.047	1.648	0.009	0.035	0.076
ABS_ACCRUAL	36653	0.017	0.009	0.053	0.000	6.277	0.003	0.009	0.018
CAP_INT	22166	0.568	0.458	0.497	0.000	9.395	0.198	0.458	0.868
ALTMAN_Z	26354	3.314	2.073	8.245	-120.272	775.112	1.088	2.073	3.691
SIZE	34999	8.009	7.990	1.804	0.167	13.483	6.836	7.990	9.204
LNNUMEST	37195	1.072	1.099	0.945	0.000	3.526	0.000	1.099	1.792
BM	37015	0.604	0.505	2.307	-372.407	69.247	0.291	0.505	0.821
AGE	36650	33.083	27.000	21.815	1.000	113.000	15.000	27.000	50.000
DLOSS	37186	0.190	0.000	0.392	0.000	1.000	0.000	0.000	0.000
FIN_CRISIS	37186	0.100	0.000	0.300	0.000	1.000	0.000	0.000	0.000

Table 2 presents descriptive statistics for the DCF model which examines the relation between a firm's CSI coverage and the propensity of being issued a cash flow forecast. The sample period is 2007 - 2016. Panel A shows the variables used in the DCF model. The variables are defined in Appendix II.

Table 3 Descriptive Statistics for the CFFA Model

Variable	N	Mean	Median	Std Dev	Minimum	Maximum	25th Pctl	50th Pctl	75th Pctl
CURRENT_RRI	37195	9.460	0.000	13.214	-1.000	81.000	-1.000	0.000	20.000
PEAK_RRI	37195	17.609	22.000	17.825	-1.000	83.000	-1.000	22.000	32.000
RRI_TREND	37195	9.377	0.000	13.205	-1.000	74.000	-1.000	0.000	20.000
CFFA	2549	-0.054	-0.009	0.628	-20.646	0.000	-0.021	-0.009	-0.004
BM	37015	0.604	0.505	2.307	-372.407	69.247	0.291	0.505	0.821
CFO_VOL	37139	0.045	0.036	0.068	0.000	6.562	0.021	0.036	0.055
CFO	36659	0.044	0.035	0.101	-9.047	1.648	0.009	0.035	0.076
HORIZON	37126	32.887	31.000	14.107	2.000	506.000	25.000	31.000	37.000
LEV	36956	0.222	0.181	0.219	0.000	3.867	0.062	0.181	0.325
SIZE	34999	8.009	7.990	1.804	0.167	13.483	6.836	7.990	9.204

Table 3 presents descriptive statistics for the DCF model which examines the relation between a firm's CSI coverage and cash flow forecast accuracy. The sample period is 2007 - 2016. Panel A shows the variables used in the CFFA model. The variables are defined in Appendix II.

Table 4 Descriptive Statistics for the Liquidity Risk Model

Variable	N	Mean	Median	Std Dev	Minimum	Maximum	25th Pctl	50th Pctl	75th Pctl
Liquidity_Risk	26775	-0.109	-0.033	2.125	-45.049	41.713	-0.840	-0.033	0.686
Accruals_Quality	19086	-0.514	-0.780	1.017	-1.767	4.291	-1.332	-0.780	0.050
Abnormal_Accruals	8721	0.244	0.256	0.198	0.000	8.685	0.192	0.256	0.291
Income_Smoothing	6178	0.004	0.003	0.097	-0.323	7.587	0.003	0.003	0.003
SIZE	18014	7.927	7.954	1.953	-1.749	13.348	6.750	7.954	9.165
Illiquidity	26603	-0.670	-0.731	0.219	-0.731	1.614	-0.731	-0.731	-0.731
Turnover	26236	0.011	0.007	0.044	0.000	1.356	0.003	0.007	0.012
Return_Momemtum	26748	1.101	1.072	0.509	0.017	18.743	0.833	1.072	1.304
Market_Beta	26775	1.164	1.091	1.978	-59.259	100.377	0.555	1.091	1.690
Arbitrage_Risk	26728	0.082	0.063	0.067	0.000	1.220	0.044	0.063	0.098
Sales_Growth	8917	0.178	0.052	5.246	-6.181	474.812	-0.034	0.052	0.148
Operating_Cycle	8705	5.403	5.320	1.088	-0.859	13.465	4.852	5.320	5.771
Capital_Intensity	24731	0.129	0.024	0.208	0.000	0.976	0.008	0.024	0.147
Cash_Ratio	9441	1.019	0.477	2.832	0.000	191.000	0.189	0.477	1.100
LOSS	26908	0.168	0.000	0.374	0.000	1.000	0.000	0.000	0.000
BTM	17579	0.719	0.605	1.476	-132.519	16.786	0.338	0.605	0.950
Accliq_risk	5619	0.009	-0.001	0.115	-0.670	0.731	-0.027	-0.001	0.021
Nonaccliq_risk	5573	-0.392	-0.210	2.016	-45.042	26.463	-1.204	-0.210	0.581
Aggregate_Quality1	5619	0.305	0.116	1.696	-3.477	78.894	-0.422	0.116	0.831

Table 4 presents descriptive statistics for the liquidity risk model which examines the relation between a firm's CSI coverage and liquidity risk. The sample period is 2007 - 2016. The variables are defined in Appendix II.

Table 5 Summary Statistics

	Current_RRI		Peak_RRI		RRI_Trend	
Year	Current_rank	Number of Firms	Peak_rank	Number of Firms	Trend_rank	Number of Firms
2007	1	45	1	42	1	47
2007	2	542	2	550	2	468
2007	3	2546	3	2505	3	2665
2007	4	165	4	205	4	150
2007	5	325	5	321	5	293
2008	1	83	1	81	1	81
2008	2	904	2	879	2	846
2008	3	1869	3	1873	3	1959
2008	4	332	4	396	4	303
2008	5	521	5	480	5	520
2009	1	177	1	172	1	170
2009	2	1348	2	1283	2	1292
2009	3	1220	3	1347	3	1289
2009	4	479	4	455	4	468
2009	5	571	5	538	5	576
2010	1	262	1	261	1	237
2010	2	1381	2	1369	2	1331
2010	3	1033	3	1030	3	1113
2010	4	597	4	648	4	586
2010	5	631	5	596	5	637
2011	1	350	1	348	1	360
2011	2	1247	2	1234	2	1248
2011	3	958	3	986	3	948
2011	4	750	4	780	4	737
2011	5	650	5	607	5	662
2012	1	512	1	514	1	513
2012	2	1116	2	990	2	1107
2012	3	897	3	1055	3	902
2012	4	777	4	780	4	788
2012	5	700	5	663	5	692
2013	1	538	1	587	1	506
2013	2	1004	2	903	2	1071
2013	3	1056	3	1111	3	1023
2013	4	785	4	851	4	772
2013	5	742	5	673	5	753
2014	1	652	1	641	1	663
2014	2	934	2	870	2	914
2014	3	964	3	1035	3	958
2014	4	804	4	856	4	825

2014	5	739	5	691	5	733
2015	1	618	1	603	1	616
2015	2	993	2	909	2	979
2015	3	871	3	1038	3	881
2015	4	827	4	789	4	818
2015	5	719	5	689	5	734
2016	1	193	1	256	1	189
2016	2	601	2	444	2	601
2016	3	420	3	523	3	418
2016	4	423	4	456	4	430
2016	5	324	5	282	5	323

Table 5 presents summary statistics.

Table 6 Pearson Correlation for the DCF Model

	CURRENT_RRI	PEAK_RRI	RRI_TREND	DCF	CFO_VOL	CFO	ABSACCRUAL	CAP_INT	ALTMAN_Z	SIZE	LNNUMEST	BM	AGE	DLOSS	FIN_CRISIS
CURRENT_RRI	1	0.845	0.944	0.220	-0.059	0.02561	-0.031	0.032	-0.063	0.455	-0.023	-0.0086	0.223	-0.0481	-0.097
		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.1106	<.0001	<.0001	<.0001
	37195	37195	37195	37195	37139	36659	36653	22166	26354	34999	37195	37015	36650	37186	37186
PEAK_RRI	0.845	1	0.840	0.229	-0.065	0.017	-0.030	0.036	-0.076	0.42312	-0.022	-0.0140	0.229	-0.0410	-0.156
	<.0001		<.0001	<.0001	<.0001	0.001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0053	<.0001	<.0001	<.0001
	37195	37195	37195	37195	37139	36659	36653	22166	26354	34999	37195	37015	36650	37186	37186
RRI_TREND	0.944	0.840	1	0.223	-0.05882	0.023	-0.031	0.034	-0.062	0.45502	-0.021	-0.00723	0.225	-0.0490	-0.098
	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.1644	<.0001	<.0001	<.0001
	37195	37195	37195	37195	37139	36659	36653	22166	26354	34999	37195	37015	36650	37186	37186
DCF	0.220	0.229	0.223	1	-0.039	0.100	-0.025	0.164	-0.026	0.42342	-0.466	-0.0240	0.040	-0.0610	-0.071
	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
	37195	37195	37195	37195	37139	36659	36653	22166	26354	34999	37195	37015	36650	37186	37186
CFO_VOL	-0.059	-0.065	-0.059	-0.0393	1	-0.112	0.228	-0.024	0.034	-0.118	-0.007	-0.032	-0.174	0.081	0.017
	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	0.0004	<.0001	<.0001	0.193	<.0001	<.0001	<.0001	0.0013
	37139	37139	37139	37139	37139	36620	36606	22142	26319	34988	37139	36967	36595	37139	37139
CFO	0.026	0.017	0.023	0.10025	-0.1119	1	-0.212	0.093	0.168	0.137	0.023	-0.019	-0.045	-0.185	0.005
	<.0001	0.001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	0.0003	<.0001	<.0001	0.3383
	36659	36659	36659	36659	36620	36659	36605	22093	26036	34874	36659	36512	36123	36659	36659
ABSACCRUAL	-0.031	-0.029	-0.031	-0.025	0.228	-0.212	1	0.074	-0.072	-0.1592	0.007	-0.05749	-0.108	0.2194	0.044
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	0.1759	<.0001	<.0001	<.0001	<.0001
	36653	36653	36653	36653	36606	36605	36653	22096	26018	34873	36653	36506	36117	36644	36644
CAP_INT	0.032	0.036	0.034	0.164	-0.024	0.09326	0.074	1	-0.129	-0.0723	0.149	-0.02831	0.0415	0.09167	-0.020
	<.0001	<.0001	<.0001	<.0001	0.0004	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.0027
	22166	22166	22166	22166	22142	22093	22096	22166	18668	21370	22166	22135	21866	22166	22166

ALTMAN_Z	-0.063	-0.076	-0.062	-0.026	0.034	0.168	-0.072	-0.129	1	0.04785	-0.006	-0.06183	-0.102	-0.075	0.001
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	0.3473	<.0001	<.0001	<.0001	0.9325
	26354	26354	26354	26354	26319	26036	26018	18668	26354	24722	26354	26354	26354	26354	26354
SIZE	0.455	0.423	0.455	0.423	-0.118	0.13714	-0.159	-0.072	0.048	1	0.066	-0.04158	0.412	-0.294	-0.063
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		<.0001	<.0001	<.0001	<.0001	<.0001
	34999	34999	34999	34999	34988	34874	34873	21370	24722	34999	34999	34969	34472	34993	34993
LNNUMEST	-0.023	-0.022	-0.021	-0.466	-0.007	0.0229	0.007	0.149	-0.006	0.06597	1	0.01051	0.001	-0.011	0.005
	<.0001	<.0001	<.0001	<.0001	0.1929	<.0001	0.1759	<.0001	0.3473	<.0001		0.0431	0.921	0.041	0.3487
	37195	37195	37195	37195	37139	36659	36653	22166	26354	34999	37195	37015	36650	37186	37186
BM	-0.008	-0.014	-0.007	-0.024	-0.031	-0.01884	-0.057	-0.028	-0.062	-0.042	0.011	1	0.042	0.024	0.016
	0.1106	0.0053	0.1644	<.0001	<.0001	0.0003	<.0001	<.0001	<.0001	<.0001	0.0431		<.0001	<.0001	0.0016
	37015	37015	37015	37015	36967	36512	36506	22135	26354	34969	37015	37015	36473	37006	37006
AGE	0.223	0.229	0.225	0.040	-0.174	-0.04492	-0.108	0.042	-0.103	0.41	0.00052	0.042	1	-0.152	-0.046
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.921	<.0001		<.0001	<.0001
	36650	36650	36650	36650	36595	36123	36117	21866	26354	34472	36650	36473	36650	36641	36641
DLOSS	-0.048	-0.041	-0.049	-0.061	0.081	-0.185	0.219	0.092	-0.075	-0.29	-0.011	0.024	-0.15152	1	0.046
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	0.041	<.0001	<.0001		<.0001
	37186	37186	37186	37186	37139	36659	36644	22166	26354	34993	37186	37006	36641	37186	37186
FIN_CRISIS	-0.097	-0.156	-0.098	-0.070	0.017	0.005	0.044	-0.020	0.001	-0.06297	0.005	0.01638	-0.046	0.046	1
	<.0001	<.0001	<.0001	<.0001	0.0013	0.3383	<.0001	0.0027	0.9325	<.0001	0.3487	0.0016	<.0001	<.0001	
	37186	37186	37186	37186	37139	36659	36644	22166	26354	34993	37186	37006	36641	37186	37186

Table 6 presents correlations for the variables used in the DCF model. Variables are defined in Appendix II.

Table 7 Pearson Correlation for the CFFA Model

	CURRENT_RRI	PEAK_RRI	RRI_TREND	CFFA	BM	CFO_VOL	CFO	Horizon	LEV	SIZE
CURRENT_RRI	1	0.84536	0.94432	-0.01956	-0.00829	-0.0591	0.02561	-0.09603	0.02132	0.45537
		<.0001	<.0001	0.3236	0.1106	<.0001	<.0001	<.0001	<.0001	<.0001
	37195	37195	37195	2549	37015	37139	36659	37126	36956	34999
PEAK_RRI	0.84536	1	0.84019	-0.01181	-0.01449	-0.06496	0.01716	-0.08876	0.04452	0.42312
	<.0001		<.0001	0.5512	0.0053	<.0001	0.001	<.0001	<.0001	<.0001
	37195	37195	37195	2549	37015	37139	36659	37126	36956	34999
RRI_TREND	0.94432	0.84019	1	-0.02262	-0.00723	-0.05882	0.02308	-0.09984	0.01995	0.45502
	<.0001	<.0001		0.2536	0.1644	<.0001	<.0001	<.0001	0.0001	<.0001
	37195	37195	37195	2549	37015	37139	36659	37126	36956	34999
CFFA	-0.01956	-0.01181	-0.02262	1	0.01834	-0.06297	-0.0058	-0.02665	0.05011	0.02676
	0.3236	0.5512	0.2536		0.3549	0.0015	0.7701	0.1786	0.0117	0.1819
	2549	2549	2549	2549	2546	2549	2539	2549	2532	2489
BM	-0.00829	-0.01449	-0.00723	0.01834	1	-0.0318	-0.01884	0.00627	-0.06871	-0.04158
	0.1106	0.0053	0.1644	0.3549		<.0001	0.0003	0.2279	<.0001	<.0001
	37015	37015	37015	2546	37015	36967	36512	36951	36777	34969
CFO_VOL	-0.0591	-0.06496	-0.05882	-0.06297	-0.0318	1	-0.1119	0.08863	0.01572	-0.11813
	<.0001	<.0001	<.0001	0.0015	<.0001		<.0001	<.0001	0.0025	<.0001
	37139	37139	37139	2549	36967	37139	36620	37080	36901	34988
CFO	0.02561	0.01716	0.02308	-0.0058	-0.01884	-0.1119	1	0.00705	0.00669	0.13714
	<.0001	0.001	<.0001	0.7701	0.0003	<.0001		0.1777	0.2016	<.0001
	36659	36659	36659	2539	36512	36620	36659	36591	36431	34874
Horizon	-0.09603	-0.08876	-0.09984	-0.02665	0.00627	0.08863	0.00705	1	0.05589	-0.27001
	<.0001	<.0001	<.0001	0.1786	0.2279	<.0001	0.1777		<.0001	<.0001
	37126	37126	37126	2549	36951	37080	36591	37126	36887	34943
LEV	0.02132	0.04452	0.01995	0.05011	-0.06871	0.01572	0.00669	0.05589	1	0.00807
	<.0001	<.0001	0.0001	0.0117	<.0001	0.0025	0.2016	<.0001		0.1323
	36956	36956	36956	2532	36777	36901	36431	36887	36956	34784
SIZE	0.45537	0.42312	0.45502	0.02676	-0.04158	-0.11813	0.13714	-0.27001	0.00807	1
	<.0001	<.0001	<.0001	0.1819	<.0001	<.0001	<.0001	<.0001	0.1323	
	34999	34999	34999	2489	34969	34988	34874	34943	34784	34999

Table 7 presents correlations for the variables used in the CFFA model. Variables are defined as in Appendix II.

Table 8 Pearson Correlation for the CFFA Model

	CURRENT_RRI	PEAK_RRI	RRI_TREND	DCF	Liquidity_beta1	std_res	Abnormal_Accruals	Income_Smoothing	Aggregate_Quality1	Accliq_risk	Nonaccliq_risk	SIZE	Illiquidity4	avg_stock_turnover	cumulativeReturn	Market_beta1	Arbitrage_risk	SalesGrowth_liq	Log_OperatingCycle_liq	CapitalIntensity_liq	CashRatio_liq	LOSS_liq	BTM_liq
CURRENT_RRI	1	0.8511	0.95092	0.12527	-0.00766	-0.08374	0.00765	-0.00272	-0.014	0.01251	0.00775	0.49303	0.01977	0.09177	0.0084	0.00407	-0.17289	-0.01754	0.11541	0.0181	-0.06173	-0.09522	-0.01176
		<.0001	<.0001	<.0001	0.21	<.0001	0.4752	0.8308	0.294	0.3485	0.5632	<.0001	0.0013	<.0001	0.1696	0.5051	<.0001	0.0977	<.0001	0.0044	<.0001	<.0001	0.1189
	26908	26908	26908	26908	26775	19086	8721	6178	5619	5619	5573	18014	26603	26236	26748	26775	26728	8917	8705	24731	9441	26908	17579
PEAK_RRI	0.8511	1	0.84547	0.14016	-0.01055	-0.10252	0.03241	0.00935	-0.00326	0.015	0.01258	0.46729	0.02074	0.05229	0.02755	-0.00298	-0.17454	-0.0229	0.11307	0.03823	-0.06202	-0.11488	-0.02146
	<.0001		<.0001	<.0001	0.0843	<.0001	0.0025	0.4623	0.8072	0.261	0.3476	<.0001	0.0007	<.0001	<.0001	0.6257	<.0001	0.0306	<.0001	<.0001	<.0001	<.0001	0.0044
	26908	26908	26908	26908	26775	19086	8721	6178	5619	5619	5573	18014	26603	26236	26748	26775	26728	8917	8705	24731	9441	26908	17579
RRI_TREND	0.95092	0.84547	1	0.1278	-0.0066	-0.09883	0.01979	-0.00152	-0.01401	0.00872	0.01055	0.485	0.01755	0.09337	0.00472	0.00337	-0.16684	-0.01742	0.10496	0.01769	-0.0576	-0.09229	-0.009
	<.0001	<.0001		<.0001	0.2802	<.0001	0.0646	0.9051	0.2937	0.5136	0.4312	<.0001	0.0042	<.0001	0.4403	0.5817	<.0001	0.0999	<.0001	0.0054	<.0001	<.0001	0.2327
	26908	26908	26908	26908	26775	19086	8721	6178	5619	5619	5573	18014	26603	26236	26748	26775	26728	8917	8705	24731	9441	26908	17579
DCF	0.12527	0.14016	0.1278	1	-0.02281	0.21705	-0.02559	-0.02294	-0.04063	-0.02818	-0.01098	0.41894	-0.04244	0.05854	0.00124	-0.03875	-0.15968	0.00937	-0.14214	0.26043	-0.06205	-0.11437	-0.10816
	<.0001	<.0001	<.0001		0.0002	<.0001	0.0168	0.0714	0.0023	0.0347	0.4123	<.0001	<.0001	<.0001	0.8394	<.0001	<.0001	0.3763	<.0001	<.0001	<.0001	<.0001	<.0001
	26908	26908	26908	26908	26775	19086	8721	6178	5619	5619	5573	18014	26603	26236	26748	26775	26728	8917	8705	24731	9441	26908	17579
Liquidity_beta1	-0.00766	-0.01055	-0.0066	-0.02281	1	-0.02225	0.00656	0.00108	-0.00585	0.00511	0.99836	-0.05563	0.02035	-0.02721	0.08959	0.68325	0.02795	0.00685	0.02233	-0.07584	-0.0209	-0.02915	0.03474
	0.21	0.0843	0.2802	0.0002		0.0022	0.5417	0.9324	0.6626	0.7029	<.0001	<.0001	0.0009	<.0001	<.0001	<.0001	<.0001	0.5195	0.0379	<.0001	0.043	<.0001	<.0001
	26775	26775	26775	26775	26775	19001	8655	6130	5573	5573	5573	17944	26507	26105	26748	26775	26728	8854	8642	24598	9373	26775	17479
std_res	-0.08374	-0.10252	-0.09883	0.21705	-0.02225	1	-0.05358	0.00401	0.50518	-0.06234	-0.03076	0.0031	0.0171	-0.02641	0.03144	-0.07392	-0.01997	0.02988	0.18024	0.14099	0.09709	0.02768	-0.08706
Residual	<.0001	<.0001	<.0001	<.0001	0.0022		<.0001	0.7538	<.0001	<.0001	0.0216	0.7387	0.019	0.0003	<.0001	<.0001	0.006	0.0056	<.0001	<.0001	<.0001	0.0001	<.0001
	19086	19086	19086	19086	19001	19086	8703	6129	5619	5619	5573	11584	18814	18846	18974	19001	18954	8591	8387	16909	9219	19086	13661
Abnormal_Accruals	0.00765	0.03241	0.01979	-0.02559	0.00656	-0.05358	1	0.00189	0.571	0.00935	0.01857	0.01736	0.00415	-0.00017	0.01568	-0.01206	0.00986	0.02293	0.00845	-0.00969	-0.01265	0.04066	0.00683
	0.4752	0.0025	0.0646	0.0168	0.5417	<.0001		0.8875	<.0001	0.4837	0.1656	0.1327	0.7006	0.9871	0.1449	0.2619	0.36	0.0357	0.4431	0.3656	0.2573	0.0001	0.5305
	8721	8721	8721	8721	8655	8703	8721	5619	5619	5619	5573	7505	8571	8658	8645	8655	8627	8388	8250	8721	8018	8721	8428
Income_Smoothing	-0.00272	0.00935	-0.00152	-0.02294	0.00108	0.00401	0.00189	1	0.62119	-0.01393	0.00268	-0.03126	-0.00384	-0.00898	0.00383	-0.00654	0.00021	-0.00004	-0.01663	-0.01537	0.00747	0.02662	0.00256
	0.8308	0.4623	0.9051	0.0714	0.9324	0.7538	0.8875		<.0001	0.2964	0.8414	0.0231	0.764	0.4822	0.7646	0.6089	0.987	0.9978	0.2185	0.2279	0.5788	0.0364	0.8445
	6178	6178	6178	6178	6130	6129	5619	6178	5619	5619	5573	5280	6112	6125	6121	6130	6115	5565	5474	6158	5521	6178	5881
Aggregate_Quality1	-0.014	-0.00326	-0.01401	-0.04063	-0.00585	0.50518	0.571	0.62119	1	-0.03659	-0.0037	0.00334	-0.01029	0.01974	0.04683	-0.00119	0.06164	0.03686	0.11164	-0.11528	0.11337	0.08241	-0.00274
	0.294	0.8072	0.2937	0.0023	0.6626	<.0001	<.0001	<.0001		0.0061	0.7824	0.8138	0.4426	0.1403	0.0005	0.929	<.0001	0.0061	<.0001	<.0001	<.0001	<.0001	0.8382
	5619	5619	5619	5619	5573	5619	5619	5619	5619	5619	5573	4976	5566	5582	5565	5573	5560	5534	5454	5619	5387	5619	5550
Accliq_risk	0.01251	0.015	0.00872	-0.02818	0.00511	-0.06234	0.00935	-0.01393	-0.03659	1	-0.05219	-0.03208	0.00083	-0.01226	-0.00226	-0.00346	-0.03401	0.00032	-0.0374	-0.02331	0.04447	-0.01085	0.00436
	0.3485	0.261	0.5136	0.0347	0.7029	<.0001	0.4837	0.2964	0.0061		<.0001	0.0236	0.9503	0.3597	0.8662	0.7959	0.0112	0.9808	0.0057	0.0806	0.0011	0.4162	0.7451
	5619	5619	5619	5619	5573	5619	5619	5619	5619	5619	5573	4976	5566	5582	5565	5573	5560	5534	5454	5619	5387	5619	5550
Nonaccliq_risk	0.00775	0.01258	0.01055	-0.01098	0.99836	-0.03076	0.01857	0.00268	-0.0037	-0.05219	1	0.05322	0.03472	-0.18498	0.12489	0.53335	-0.24572	0.0116	-0.02685	-0.06152	-0.04695	-0.08839	0.02076
	0.5632	0.3476	0.4312	0.4123	<.0001	0.0216	0.1656	0.8414	0.7824	<.0001		0.0002	0.0097	<.0001	<.0001	<.0001	<.0001	0.3902	0.0483	<.0001	0.0006	<.0001	0.1235
	5573	5573	5573	5573	5573	5573	5573	5573	5573	5573	5573	4959	5547	5536	5565	5573	5560	5490	5410	5573	5341	5573	5505
SIZE	0.49303	0.46729	0.485	0.41894	-0.05563	0.0031	0.01736	-0.03126	0.00334	-0.03208	0.05322	1	-0.00138	0.07782	0.07619	-0.04703	-0.40416	-0.00555	0.11406	-0.0051	-0.0717	-0.33111	-0.07157
	<.0001	<.0001	<.0001	<.0001	<.0001	0.7387	0.1327	0.0231	0.8138	0.0236	0.0002		0.8542	<.0001	<.0001	<.0001	<.0001	0.6256	<.0001	0.504	<.0001	<.0001	<.0001
	18014	18014	18014	18014	17944	11584	7505	5280	4976	4976	4959	18014	17839	17447	17939	17944	17917	7744	7601	17157	7752	18014	12702
Illiquidity4	0.01977	0.02074	0.01755	-0.04244	0.02035	0.0171	0.00415	-0.00384	-0.01029	0.00083	0.03472	-0.00138	1	-0.04674	-0.01801	0.00968	-0.04732	0.01025	0.07361	-0.03795	-0.01242	-0.01789	-0.01085
	0.0013	0.0007	0.0042	<.0001	0.0009	0.019	0.7006	0.764	0.4426	0.9503	0.0097	0.8542		<.0001	0.0034	0.115	<.0001	0.3371	<.0001	<.0001	0.2321	0.0035	0.1529
	26603	26603	26603	26603	26507	18814	8571	6112	5566	5566	5547	17839	26603	25950	26480	26507	26497	8767	8557	24427	9264	26603	17347
avg_stock_turnover	0.09177	0.05229	0.09337	0.05854	-0.02721	-0.02641	-0.00017	-0.00898	0.01974	-0.01226	-0.18498	0.07782	-0.04674	1	0.02826	0.01559	0.04821	0.03662	-0.10187	-0.01196	0.01898	0.0199	0.00832
	<.0001	<.0001	<.0001	<.0001	<.0001	0.0003	0.9871	0.4822	0.1403	0.3597	<.0001	<.0001	<.0001		<.0001	0.0118	<.0001	0.0006	<.0001	0.0629	0.0665	0.0013	0.2748
	26236	26236	26236	26236	26105	18846	8658	6125	5582	5582	5536	17447	25950	26236	26078	26105	26058	8817	8602	24171	9346	26236	17211
cumulativeReturn	0.0084	0.02755	0.00472	0.00124	0.08959	0.03144	0.01568	0.00383	0.04683	-0.00226	0.12489	0.07619	-0.01801	0.02826	1	0.05987	0.07286	0.0033	-0.00564	0.00861	0.02973	-0.11596	-0.14646
	0.1696	<.0001	0.4403	0.8394	<.0001	<.0001	0.1449	0.7646	0.0005	0.8662	<.0001	<.0001	0.0034	<.0001		<.0001	<.0001	0.7561	0.6003	0.1769	0.004	<.0001	<.0001
	26748	26748	26748	26748	26748	18974	8645	6121	5565	5565	5565	17939	26480	26078	26748	26748	26702	8844	8632	24571	9362	26748	17460
Market_beta1	0.00407	-0.00298	0.00337	-0.03875	0.68325	-0.07392	-0.01206	-0.00654	-0.00119	-0.00346	0.53335	-0.04703	0.00968	0.01559	0.05987	1	0.16443	-0.00036	0.0583	-0.07396	-0.01168	0.06609	0.05847
	0.5051	0.6257	0.5817	<.0001	<.0001	<.0001	0.2619	0.6089	0.929	0.7959	<.0001	<.0001	0.115	0.0118	<.0001		<.0001	0.9731	<.0001	<.0001	0.2582	<.0001	<.0001
	26775	26775	26775	26775	26775	19001	8655	6130	5573	5573	5573	17944	26507	26105	26748	26775	26728	8854	8642	24598	9373	26775	17479
Arbitrage_risk	-0.17289	-0.17454	-0.16684	-0.15968	0.02795	-0.01997	0.00986	0.00021	0.06164	-0.03401	-0.24572	-0.40416	-0.04732	0.04821	0.07286	0.16443	1	0.02497	0.0118	0.02541	0.0849	0.45141	0.07032
Residual	<.0001	<.0001	<.0001	<.0001	<.0001	0.006	0.36	0.987	<.0001	0.0112	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		0.019	0.2735	<.0001	<.0001	<.0001	<.0001
	26728	26728	26728	26728	26728	18954	8627	6115	5560	5560	5560	17917	26497	26058	26702	26728	26728	8826	8614	24551	9335	26728	17440
SalesGrowth_liq	-0.01754	-0.0229	-0.01742	0.00937	0.00685	0.02988	0.02293	-0.00004	0.03686	0.00032	0.0116	-0.00555	0.01025	0.03662	0.0033	-0.00036	0.02497	1	0.00708	0.01116	0.03387	0.02412	-0.002
	0.0977	0.0306	0.0999	0.3763	0.5195	0.0056	0.0357	0.9978	0.0061	0.9808	0.3902	0.6256	0.3371	0.0006	0.7561	0.9731	0.019		0.509	0.2953	0.0024	0.0227	0.8505
	8917	8917	8917	8917	8854	8591	8388	5565	5534	5534	5490	7744	8767	8817	8844	8854	8826	8917	8693	8792	8047	8917	8912
Log_OperatingCycle_liq	0.11541	0.11307	0.10496	-0.14214	0.02233	0.18024	0.00845	-0.01663	0.11164	-0.0374	-0.02685	0.11406	0.07361	-0.10187	-0.00564	0.0583	0.0118	0.00708	1	-0.35368	-0.01798	0.00855	-0.00749
	<.0001	<.0001	<.0001	<.0001	0.0379	<.0001	0.4431	0.2185	<.0001	0.0057	0.0483	<.0001	<.0001	<.0001	0.6003	<.0001	0.2735	0.509		<.0001	0.1092	0.4253	0.4849
	8705	8705	8705	8705	8642	8387	8250	5474	5454	5454	5410	7601	8557	8602	8632	8642	8614	8693	8705	8604	7937	8705	8700
CapitalIntensity_liq	0.0181	0.03823	0.01769	0.26043	-0.07584	0.14099	-0.00969	-0.01537	-0.11528	-0.02331	-0.06152	-0.0051	-0.03795	-0.01196	0.00861	-0.07396	0.02541	0.01116	-0.35368	1	-0.08728	0.04234	-0.05531
	0.0044	<.0001	0.0054	<.0001	<.0001	<.0001	0.3656	0.2279	<.0001	0.0806	<.0001	0.504	<.0001	0.0629	0.1769	<.0001	<.0001	0.2953	<.0001		<.0001	<.0001	<.0001
	24731	24731	24731	24731	24598	16909	8721	6158	5619	5619	5573	17157	24427	24171	24571	24598	24551	8792	8604	24731	9441	24731	16206
CashRatio_liq	-0.06173	-0.06202	-0.0576	-0.06205	-0.0209	0.09709	-0.01265	0.00747	0.11337	0.04447	-0.04695	-0.0717	-0.01242	0.01898	0.02973	-0.01168	0.0849	0.03387	-0.01798	-0.08728	1	0.0657	-0.00046
	<.0001	<.0001	<.0001	<.0001	0.043	<.0001	0.2573	0.5788	<.0001	0.0011	0.0006	<.0001	0.2321	0.0665	0.004	0.2582	<.0001	0.0024	0.1092	<.0001		<.0001	0.9647
	9441	9441	9441	9441	9373	9219	8018	5521	5387	5387	5341	7752	9264	9346	9362	9373	9335	8047	7937	9441	9441	9441	9436
LOSS_liq	-0.09522	-0.11488	-0.09229	-0.11437	-0.02915	0.02768	0.04066	0.02662	0.08241	-0.01085	-0.08839	-0.33111	-0.01789	0.0199	-0.11596	0.06609	0.45141	0.02412	0.00855	0.04234	0.0657	1	0.08127
	<.0001	<.0001	<.0001	<.0001	<.0001	0.0001	0.0001	0.0364	<.0001	0.4162	<.0001	<.0001	0.0035	0.0013	<.0001	<.0001	<.0001	0.0227	0.4253	<.0001	<.0001		<.0001
	26908	26908	26908	26908	26775	19086	8721	6178	5619	5619	5573	18014	26603	26236	26748	26775	26728	8917	8705	24731	9441	26908	17579
BTM_liq	-0.01176	-0.02146	-0.009	-0.10816	0.03474	-0.08706	0.00683	0.00256	-0.00274	0.00436	0.02076	-0.07157	-0.01085	0.00832	-0.14646	0.05847	0.07032	-0.002	-0.00749	-0.05531	-0.00046	0.08127	1
	0.1189	0.0044	0.2327	<.0001	<.0001	<.0001	0.5305	0.8445	0.8382	0.7451	0.1235	<.0001	0.1529	0.2748	<.0001	<.0001	<.0001	0.8505	0.4849	<.0001	0.9647	<.0001	
	17579	17579	17579	17579	17479	13661	8428	5881	5550	5550	5505	12702	17347	17211	17460	17479	17440	8912	8700	16206	9436	17579	17579

Table 9 Regressions Examining the Effect of a Firm's Media coverage of ESG Issues and Analyst's Decision to Issue a Cash Flow Forecast (Test of H1)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.010	+/-	0.0126	+/-	0.0133
		(0.063)		(0.0627)		(0.0625)
ESG_INDEX	-	-0.0004**	+	-0.0004**	+	-0.0003
		(0.0002)		(0.0002)		(0.0002)
CFO_VOL	-	-0.1117***	+	-0.1123***	+	0.1114***
		(0.0334)		(0.0336)		(0.0332)
CFO	-	0.1111***	-	0.1108***	+/-	0.1114***
		(0.0211)		(0.0211)		(0.0212)
ABS_ACCRUAL	+	0.1387**	-	0.1387**	+	0.1374**
		(0.0583)		(0.0585)		(0.0583)
CAP_INT	+	0.0638***	-	0.0638***	+	0.0636***
		(0.0069)		(0.0069)		(0.0069)
ALTMAN_Z	+	-0.0019***	-	-0.0019***	-	-0.0019***
		(0.0005)		(0.0005)		(0.0005)
SIZE		0.1525***		0.1525***		0.1518***
		(0.0022)		(0.0021)		(0.0022)
ANALYST_FOLLOWING		-0.3149***		-0.3150***		-0.3150***
		(0.0026)		(0.0026)		(0.0026)
BM		0.0249***		0.0249***		0.0248***
		(0.0047)		(0.0047)		(0.0047)
AGE		-0.0034***		-0.0034***		-0.0035***
		(0.0002)		(0.0002)		(0.0002)
DLOSS		0.0082		0.0083		0.0078

	(0.0063)	(0.0063)	(0.0063)
FIN_CRISIS	-0.1684***	-0.1713***	-0.1677***
	(0.0115)	(0.0117)	(0.0112)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	17,831	17,831	17,831
R_2	%	%	%

Table 9 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues and analyst's decision to issue a cash flow forecast for the firm. The dependent variable is the propensity to issue a cash flow forecast (i.e. DCF) for Column (1), (2), and (3). The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix III. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 10 Regressions Examining the Effect of a Firm's Media coverage of ESG Issues and Analyst's Decision to Issue a Cash Flow Forecast to Test H1 (Excluding Financial and Utility Firms)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.0372	+/-	0.0429	+/-	0.0407
		(0.0616)		(0.0615)		(0.0615)
ESG_INDEX	-	-0.0007***	+	-0.0004**	+	-0.0005**
		(0.0002)		(0.0002)		(0.0002)
CFO_VOL	-	-0.1240***	+	-0.1243***	+	-0.1236***
		(0.0376)		(0.0376)		(0.0374)
CFO	-	0.0988***	-	0.0989***	+/-	0.0990***
		(0.0206)		(0.0207)		(0.0206)
ABS_ACCRUAL	+	0.0951	-	0.0937	+	0.0937
		(0.0593)		(0.0595)		(0.0592)
CAP_INT	+	0.0651***	-	0.0650***	+	0.0650***
		(0.0070)		(0.0070)		(0.0070)
ALTMAN_Z	+	-0.0025***	-	-0.0025***	-	-0.0025***
		(0.0007)		(0.0007)		(0.0007)
SIZE		0.1466***		0.1459***		0.1459***
		(0.0023)		(0.0023)		(0.0023)
ANALYST_FOLLOWING		-0.3137***		-0.3138***		-0.3137***
		(0.0028)		(0.0028)		(0.0028)
BM		0.0224***		0.0223***		0.0223***
		(0.0043)		(0.0043)		(0.0043)
AGE		-0.0030***		-0.0030***		-0.0030***
		(0.0002)		(0.0002)		(0.0002)
DLOSS		-0.0021		-0.0025		-0.0025
		(0.0066)		(0.0066)		(0.0066)

FIN_CRISIS	-0.1606***	-0.1625***	-0.1598***
	(0.0120)	(0.0121)	(0.0121)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	15,127	15,127	15,127
R_2	74.46%	74.45%	74.45%

Table 10 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues and analyst's decision to issue a cash flow forecast for the firm. The sample excludes financial firms and utility firms. The dependent variable is the propensity to issue a cash flow forecast (i.e. DCF) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 11 Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy. (Test of H2)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.455*	+/-	-0.441*	+/-	-0.487*
		(0.256)		(0.250)		(0.272)
ESG_INDEX	-	-0.003*	+	-0.001*	+	-0.003*
		(0.001)		(0.001)		(0.002)
BM	-	0.030	+	0.025	+	0.031
		(0.030)		(0.025)		(0.027)
CFO_VOL	-	-0.601	+	-0.595	+	-0.611
		(0.481)		(0.484)		(0.477)
CFO	-	0.052	-	0.047	+/-	0.051
		(0.177)		(0.179)		(0.177)
HORIZON	+	-0.002*	-	-0.002*	+	-0.002*
		(0.001)		(0.001)		(0.001)
LEV	+	0.129	-	0.122	+	0.132
		(0.105)		(0.101)		(0.106)
SIZE	+	0.035*	-	0.030*	-	0.036*
		(0.019)		(0.017)		(0.020)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,464		2,464		1,889
R_2		4.88%		4.76%		4.91%

Table 11 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 12 Regressions Examining the Effect of a Firm's Each of the Three Categories of ESG Issues Covered by the Media on Analyst Cash Flow Forecast Accuracy. (Test of H3)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.450*	+/-	-0.412	+/-	-0.455*
		(0.297)		(0.251)		(0.265)
Sum_Environmental_Covered	-	-0.022*	+		+	
		(0.012)				
Sum_Social_Covered				0.011		
				(0.009)		
Sum_Governance_Covered						-0.062
						(0.064)
BM	-	0.028	+	0.020	+	0.021
		(0.027)		(0.022)		(0.023)
CFO_VOL	-	-0.600	+	-0.549	+	-0.540
		(0.485)		(0.494)		(0.493)
CFO	-	0.097	-	0.095	+/-	0.110
		(0.165)		(0.166)		(0.163)
HORIZON	+	-0.002*	-	-0.002*	+	-0.002*
		(0.001)		(0.001)		(0.001)
LEV	+	0.141	-	0.119	+	0.135
		(0.114)		(0.102)		(0.111)
SIZE	+	0.031*	-	0.022	-	0.027*
		(0.019)		(0.014)		(0.016)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,780		2,780		2,780
R_2		4.85%		4.72%		4.96%

This table reports the regression estimates that investigate the impact of a firm's each of the three categories of ESG issues covered by the media on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Sum_Environmental_Covered, Sum_Social_Covered, and Sum_Governance_Covered for Column (1), (2), and (3), respectively. Variables are defined in Appendix. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 13 Regressions Examining the Effect of Different Levels of Media Reach Outlet for the Risk Incidents associated with Each of the Three ESG Issues Categories on Analyst Cash Flow Forecast Accuracy

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.434*	+/-	-0.392	+/-	-0.432*
		(0.264)		(0.249)		(0.256)
Sum_Environment_High_Reach	-	0.051	+		+	
		(0.031)				
Sum_Environment_Medium_Reach		-0.094*				
		(0.055)				
Sum_Environment_Low_Reach		0.036				
		(0.025)				
Sum_Social_High_Reach				0.071*		
				(0.042)		
Sum_Social_Medium_Reach				-0.017		
				(0.015)		
Sum_Social_Low_Reach				0.006		
				(0.011)		
Sum_Governance_High_Reach						0.018
						(0.014)
Sum_Governance_Medium_Reach						-0.022
						(0.024)
Sum_Governance_Low_Reach						-0.250
						(0.282)
BM	-	0.028	+	0.021	+	0.021
		(0.027)		(0.022)		(0.023)
CFO_VOL	-	-0.600	+	-0.506	+	-0.509
		(0.485)		(0.494)		(0.526)

CFO	-	0.097	-	0.091	+/-	0.134
		(0.165)		(0.166)		(0.161)
HORIZON	+	-0.002*	-	-0.002*	+	-0.001*
		(0.001)		(0.001)		(0.001)
LEV	+	0.141	-	0.123	+	0.136
		(0.114)		(0.104)		(0.114)
SIZE	+	0.031*	-	0.023	-	0.026*
		(0.019)		(0.014)		(0.015)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,780		2,780		2,780
R_2		4.85%		4.77%		5.64%

Table 13 presents the regression estimates that investigate the impact of different levels of media reach outlet for the risk incidents associated with each of the three ESG issues categories on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable are different levels of media reach outlet (i.e. High, Medium and Low Reach) for environmental issues, social issues and governance issues for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 14 Regressions Examining the Effect of Different Levels of Severity for the Risk Incidents associated with Each of the Three ESG Issues Categories on Analyst Cash Flow Forecast Accuracy

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.473*	+/-	-0.386	+/-	-0.476*
		(0.284)		(0.236)		(0.272)
Sum_Environment_High_Severity	-	-0.051	+		+	
		(0.037)				
Sum_Environment_Medium_ Severity		0.024				
		(0.015)				
Sum_Environment_Low_ Severity		-0.053*				
		(0.029)				
Sum_Social_High_ Severity				-0.039*		
				(0.022)		
Sum_Social_Medium_ Severity				-0.026		
				(0.017)		
Sum_Social_Low_ Severity				0.036		
				(0.026)		
Sum_Governance_High_ Severity						0
						0
Sum_Governance_Medium_ Severity						0.044**
						(0.022)
Sum_Governance_Low_ Severity						-0.091
						(0.082)
BM	-	0.030	+	0.021	+	0.022
		(0.028)		(0.023)		(0.023)
CFO_VOL	-	-0.647	+	-0.523	+	-0.603

		(0.473)		(0.504)		(0.480)
CFO	-	0.116	-	0.093	+/-	0.109
		(0.159)		(0.167)		(0.164)
HORIZON	+	-0.002*	-	-0.002*	+	-0.002*
		(0.001)		(0.001)		(0.001)
LEV	+	0.140	-	0.121	+	0.127
		(0.113)		(0.103)		(0.107)
SIZE	+	0.032*	-	0.023	-	0.028*
		(0.019)		(0.015)		(0.016)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,780		2,780		2,780
R_2		4.85%		4.79%		5.13%

Table 14 presents the regression estimates that investigate the impact of different levels of severity for the risk incidents associated with each of the three ESG issues categories on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable are different levels of severity (i.e. High, Medium and Low Severity) for environmental issues, social issues and governance issues for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 15 Regression Examining the Joint Effect of Media Reach Outlet and Severity of Risk Incidents or Coverage associated with Environmental Issues on Analyst Cash Flow Forecast Accuracy

Variables	Predicted Sign	Coefficient
Intercept	+/-	-0.411
		(0.255)
E_LoRch_LoSev	-	0.014
		(0.009)
E_LoRch_MedSev	+	-0.012*
		(0.007)
E_LoRch_HiSev	+	-0.012
		(0.028)
E_MedRch_LoSev	+/-	-0.021*
		(0.012)
E_MedRch_MedSev	+/-	0.019*
		(0.010)
E_MedRch_HiSev	+/-	0.027
		(0.027)
E_HiRch_LoSev		0.018*
		(0.011)
E_HiRch_MedSev		-0.021*
		(0.012)
E_HiRch_HiSev		-0.005
		(0.010)
BM		0.023
		(0.024)
CFO_VOL		-0.565
		(0.493)
CFO		0.103
		(0.166)
HORIZON		-0.002*
		(0.001)
LEV		0.127
		(0.107)
SIZE		0.025
		(0.016)
Year fixed effect		Yes
Firm fixed effect		Yes
N		2,780
R_2		4.83%

Table 15 presents the regression estimates that investigate the joint effect of media reach outlet and severity of risk incidents or coverage associated with environmental issues on analyst cash flow forecast accuracy. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 16 Regression Examining the Effect of the Joint Effect of Media Reach Outlet and Severity of Risk Incidents or Coverage associated with Social Issues on Analyst Cash Flow Forecast Accuracy

Variables	Predicted Sign	Coefficient
Intercept	+/-	-0.431*
		(0.258)
S_LoRch_LoSev	-	-0.003
		(0.005)
S_LoRch_MedSev	+	0.002
		(0.005)
S_LoRch_HiSev	+	-0.020
		(0.019)
S_MedRch_LoSev	+/-	-0.006
		(0.010)
S_MedRch_MedSev	+/-	0.004
		(0.006)
S_MedRch_HiSev	+/-	-0.014
		(0.011)
S_HiRch_LoSev		0.019
		(0.013)
S_HiRch_MedSev		-0.023*
		(0.013)
S_HiRch_HiSev		0.048*
		(0.028)
BM		0.022
		(0.023)
CFO_VOL		-0.555
		(0.492)
CFO		0.089
		(0.168)
HORIZON		-0.002*
		(0.001)
LEV		0.123
		(0.105)
SIZE		0.024
		(0.015)
Year fixed effect		Yes
Firm fixed effect		Yes
N		2,780
R_2		4.75%

Table 16 presents the regression estimates that investigate the joint effect of media reach outlet and severity of risk incidents or coverage associated with social issues on analyst cash flow forecast accuracy. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 17 Regression Examining the Effect of the Joint Effect of Media Reach Outlet and Severity of Risk Incidents or Coverage associated with Governance issues on Analyst Cash Flow Forecast Accuracy

Variables	Predicted Sign	Coefficient
Intercept	+/-	-0.452*
		(0.263)
G_LoRch_LoSev	-	-0.439
		(0.415)
G_LoRch_MedSev	+	0.253
		(0.215)
G_LoRch_HiSev	+	
G_MedRch_LoSev	+/-	0.082
		(0.087)
G_MedRch_MedSev	+/-	0.064
		(0.092)
G_MedRch_HiSev	+/-	-0.014
		(0.011)
G_HiRch_LoSev		-0.029
		(0.035)
G_HiRch_MedSev		0.057
		(0.084)
G_HiRch_HiSev		
BM		0.025
		(0.025)
CFO_VOL		-0.748
		(0.495)
CFO		0.162
		(0.163)
HORIZON		-0.002*
		(0.001)
LEV		0.130
		(0.107)
SIZE		0.024
		(0.015)
Year fixed effect		Yes
Firm fixed effect		Yes
N		2,780
R_2		8.23%

Table 17 presents the regression estimates that investigate the joint effect of media reach outlet and severity of risk incidents or coverage associated with governance issues on analyst cash flow forecast accuracy. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 18 Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy. (More controls)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.454	+/-	-0.451	+/-	-0.471*
		(0.480)		(0.487)		(0.489)
ESG_INDEX	-	-0.002*	+	-0.001*	+	-0.002*
		(0.001)		(0.001)		(0.001)
BM	-	0.204	+	0.198	+	0.205
		(0.164)		(0.161)		(0.165)
CFO_VOL	-	-0.808**	+	-1.785**	+	-1.792**
		(0.810)		(0.810)		(0.807)
CFO	-	0.098	-	0.087	+/-	0.099
		(0.115)		(0.117)		(0.114)
HORIZON	+	-0.001*	-	-0.001*	+	-0.001*
		(0.001)		(0.001)		(0.001)
LEV	+	0.356	-	0.350	+	0.360
		(0.357)		(0.354)		(0.360)
SIZE	+	0.167	-	0.164	-	0.168
		(0.125)		(0.124)		(0.126)
AGE		0.001		0.001		0.001
		(0.001)		(0.001)		(0.001)
INSTOWN		0.253		0.252		0.250
		(0.161)		(0.161)		(0.160)
INTAN		-0.235		-0.239		-0.234
		(0.231)		(0.233)		(0.231)
LNASSETS		-0.164		-0.163		-0.165

	(0.120)	0.119	(0.120)
LOGSEG	0.081	0.082	0.081
	(0.068)	(0.068)	(0.068)
LOSS	0.013	0.011	0.012
	(0.033)	(0.032)	(0.033)
ANALYST_FOLLOWING	-0.031	-0.031	-0.031
	(0.026)	(0.026)	(0.026)
MARGIN	0.009	0.008	0.009
	(0.011)	(0.011)	(0.011)
EPS_VOL	0.025	0.026	0.026
	(0.020)	(0.020)	(0.020)
RET_VOL	0.002	0.002	0.002
	(0.003)	(0.003)	(0.003)
RET_EARN	-0.007	-0.008	-0.007
	(0.007)	(0.007)	0.007
ROA	0.015	0.025	0.016
	(0.100)	(0.103)	(0.099)
SURPRISE	-0.004	-0.003	-0.004
	(0.004)	(0.004)	0.004
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	1,503	1,503	1,503
R_2	4.98%	4.96%	4.99%

Table 18 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The model includes more control variables that affect analyst forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 19 Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy to Test H2 (Exclude Financial and Utility firms)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.591*	+/-	-0.578*	+/-	-0.640*
		(0.351)		(0.343)		(0.374)
ESG_INDEX	-	-0.004**	+	-0.002**	+	-0.004**
		(0.002)		(0.001)		(0.002)
BM	-	0.037	+	0.033	+	0.037
		(0.030)		(0.028)		(0.031)
CFO_VOL	-	-0.552	+	-0.567**	+	-0.566
		(0.560)		(0.559)		(0.553)
CFO	-	-0.074	-	-0.083	+/-	-0.075
		(0.230)		(0.233)		(0.231)
HORIZON	+	-0.002*	-	-0.002*	+	-0.002*
		(0.001)		(0.001)		(0.001)
LEV	+	0.187	-	0.187	+	0.193
		(0.140)		(0.139)		(0.143)
SIZE	+	0.048*	-	0.043*	-	0.050
		(0.027)		(0.024)		(0.027)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		1,876		1,876		1,876
R_2		4.75%		4.60%		4.78%

Table 19 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The sample excludes financial firms and utility firms. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 20 Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy 1 Quarter Ahead. (Test of H1)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.321	+/-	-0.300	+/-	-0.334*
		(0.226)		(0.212)		(0.233)
ESG_INDEX	-	-0.002	+	-0.001*	+	-0.002*
		(0.001)		(0.000)		(0.001)
BM	-	0.013	+	0.010	+	0.013
		(0.023)		(0.021)		(0.023)
CFO_VOL	-	-0.549	+	-0.546	+	-0.567
		(0.578)		(0.581)		(0.573)
CFO	-	0.393	-	0.388	+/-	0.394
		(0.247)		(0.246)		(0.248)
HORIZON	+	-0.001	-	-0.001	+	-0.001
		(0.000)		(0.000)		(0.000)
LEV	+	0.115	-	0.110	+	0.117
		(0.111)		(0.107)		(0.111)
SIZE	+	0.025	-	0.021	-	0.025
		(0.017)		(0.014)		(0.017)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,442		2,442		2,442
R_2		5.16%		5.05%		5.19%

Table 20 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy one-quarter ahead. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 21 Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy 2 Quarter Ahead.

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.188	+/-	-0.166	+/-	-0.186
		(0.199)		(0.181)		(0.194)
ESG_INDEX	-	-0.002	+	-0.001**	+	-0.002*
		(0.001)		(0.000)		(0.001)
BM	-	0.023	+	0.018	+	0.021
		(0.033)		(0.029)		(0.031)
CFO_VOL	-	-0.846	+	-0.845	+	-0.857
		(0.716)		(0.718)		(0.716)
CFO	-	0.422	-	0.418	+/-	0.427
		(0.262)		(0.264)		(0.265)
HORIZON	+	-0.002*	-	-0.002*	+	-0.002*
		(0.001)		(0.001)		(0.001)
LEV	+	0.135	-	0.129	+	0.133
		(0.124)		(0.117)		(0.121)
SIZE	+	0.020	-	0.016*	-	0.018
		(0.013)		(0.009)		(0.012)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,389		2,389		2,389
R_2		5.70%		5.59%		5.66%

Table 21presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy two-quarter ahead. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 22A First-stage Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy. (Propensity Score Matching Models)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-478.0661***	+/-	-702.8100***	+/-	-517.8754***
		(18.1375)		(18.7619)		(18.4968)
LNASSETS	-	0.6110***	+	0.5490***	+	0.6329***
		(0.0175)		(0.0168)		(0.0178)
LEVERAGE	-	0.4989***	+	0.5960***	+	0.4925***
		(0.0997)		(0.0979)		(0.1007)
LOSS	-	0.2586***	+	0.1768**	+	0.2465***
		(0.0707)		(0.0693)		(0.0715)
RD	-	4.0702***	-	3.0180***	+/-	4.1903***
		(0.9544)		(0.9670)		(0.9648)
RET_SD	+	0.2015	-	0.9257**	+	0.7024*
		(0.4039)		(0.3668)		(0.3999)
ROA		-0.0343		1.0662		-0.0373
		(0.6767)		(0.6709)		(0.6869)
HHI	+	3.1388***	-	2.6199***	+	3.0269***
		(0.9408)		(0.9383)		(0.9569)
DMERGER	+	0.1011**	-	0.1198	-	0.0620
		(0.0497)		(0.0509)		(0.0501)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		11,722		11,722		11,722
R_2		20.64%		23.94%		21.69%

Table 23 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 22B Second-stage Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy. (Propensity Score Matching Models)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-10.0993	+/-	-13.2351	+/-	-10.3699
		(3.1070)		(3.8885)		(3.2004)
ESG_INDEX_PSM	-	-0.1313***	+	-0.1181***	+	-0.1263***
		(0.0267)		(0.0261)		(0.0263)
BM	-	-0.0047	+	-0.0094	+	-0.0050
		(0.0070)		(0.0067)		(0.0070)
CFO_VOL	-	-0.1139	+	-0.1340*	+	-0.1089
		(0.0744)		(0.0747)		(0.0744)
CFO	-	-0.0070	-	-0.0083	+/-	0.0065
		(0.0283)		(0.0284)		(0.0283)
HORIZON	+	-0.0002	-	-0.0003	+	-0.0002
		(0.0002)		(0.0002)		(0.0002)
LEV	+	0.0338**	-	0.0260*	+	0.0324**
		(0.0142)		(0.0136)		(0.0141)
SIZE	+	0.0158***	-	0.0117***	-	0.0153***
		(0.0033)		(0.0028)		(0.0033)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		747		747		747
R_2		5.83%		5.05%		5.04%

Table 23 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 23A First-stage Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy. (Heckman's Two-Stage Models)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	6.2287	+/-	6.49	+/-	6.363
		(3110.033)		(3096.328)		(3108.375)
AGE	-	0.0199***	+	0.0225***	+	0. 0202***
		(0.001)		(0.0011)		(0.001)
RD	-	-2.7845***	+	-1.6769***	+	-2.5711***
		(0.6385)		(0.5142)		(0.636)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		13,023		13,023		13,023
R_2		10.50%		12.46%		11.32%

Table 23 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 23B Second-stage Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy. (Heckman Two-stage Models)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.0768	+/-	0.0619	+/-	-0.0766
		(0.0603)		(0.0576)		(0.0604)
ESG_INDEX	-	-0.0003*	+	-0.0003*	+	-0.0003
		(0.0002)		(0.0001)		(0.0002)
BM	-	-0.0302***	+	-0.0296***	+	-0.0301***
		(0.0075)		(0.0074)		(0.0075)
CFO_VOL	-	-0.0042	+	-0.0102	+	-0.0103
		(0.0882)		(0.0883)		(0.0884)
CFO	-	-0.0012	-	-0.0006	+/-	-0.0008
		(0.0316)		(0.0316)		(0.0316)
HORIZON	+	-0.0005**	-	-0.0005**	+	-0.0005**
		(0.0002)		(0.0002)		(0.0002)
LEV	+	-0.0004	-	-0.0005	+	-0.0001
		(0.0206)		(0.0206)		(0.0207)
SIZE	+	-0.0015	-	-0.0011	-	-0.0016
		(0.0030)		(0.0028)		(0.0031)
IMR		-0.1235***		-0.1050**		-0.1234***
		(0.0475)		(0.0454)		(0.0475)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		746		746		746
R_2		39.78%		39.70%		39.68%

Table 23 presents the regression estimates that investigate the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Liquidity Risk Model

Table 24 Second-stage Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Accounting-related Liquidity Risk. (Test of 4a)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.1331***	+/-	0.1291***	+/-	0.1345***
		(0.0196)		(0.0194)		(0.0196)
ESG_INDEX	-	0.0006***	+	0.0005***	+	0.0006***
		(0.0002)		(0.0001)		(0.0002)
SIZE	-	-0.0081***	+	-0.0078***	+	-0.0083***
		(0.0014)		(0.0013)		(0.0014)
ILLIQUIDITY	-	0.0082	-	0.0086	+/-	0.0084
		(0.0090)		(0.0090)		(0.0090)
TURNOVER	+	0.2180	-	0.2030	+	0.2190
		(0.2224)		(0.2222)		(0.2224)
RETURN_MOMENTUM	+	0.0034	-	0.0031	+	0.0034
		(0.0039)		(0.0038)		(0.0039)
MARKET_BETA	+	-0.0009	-	-0.0009***	-	-0.0009
		(0.0008)		(0.0008)		(0.0008)
ARBITRAGE_RISK		-0.2098***		-0.2031***		-0.2107***
		(0.0492)		(0.0490)		(0.0492)
SALES_GROWTH		0.0001		0.0001		0.0001
		(0.0002)		(0.0002)		(0.0002)
OPERATING_CYCLE		-0.0083***		-0.0086***		-0.0084***
		(0.0025)		(0.0025)		(0.0025)
CAPITAL_INTENSITY		-0.0145**		-0.0148**		-0.0151**
		(0.0072)		(0.0072)		(0.0072)

CASH_RATIO	0.0000	-0.0001	-0.0001
	(0.0012)	(0.0012)	(0.0012)
LOSS	-0.0051	-0.0055	-0.0052
	(0.0053)	(0.0053)	(0.0053)
BTM	-0.0002	-0.0002	-0.0001
	0.0022	0.0022	0.0022
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	4,693	4,693	4,693
R_2	0.93%	0.94%	0.96%

Table 24 presents the second-stage regression estimates that investigate the impact of a firm's media coverage of ESG issues on liquidity risk for the firm. The dependent variable is the accounting-related liquidity risk (i.e. Accliq_Risk) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 25 Regressions Examining the Effect of Analyst Cash Flow Forecasts on the relation between a Firm's Media coverage of ESG Issues and Accounting-related Liquidity Risk. (Test of 4b)

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.1303***	+/-	0.1268***	+/-	0.1312***
		(0.0200)		(0.0200)		(0.0200)
ESG_INDEX	-	0.0009**	+	0.0005**	+	0.0010**
		(0.0004)		(0.0002)		(0.0004)
DCF		0.0012		0.0006		0.0016
		(0.0054)		(0.0061)		(0.0054)
*ESG_INDEX*DCF*		-0.0003		-0.0001		-0.0004
		(0.0004)		(0.0003)		(0.0004)
SIZE	-	-0.0079***	+	-0.0075***	+	-0.0080***
		(0.0016)		(0.0015)		(0.0015)
ILLIQUIDITY	-	0.0077	-	0.0083	+/-	0.0078
		(0.0090)		(0.0090)		(0.0090)
TURNOVER	+	0.2124	-	0.2043	+	0.2115
		(0.2244)		(0.2241)		(0.2243)
RETURN_MOMENTUM	+	0.0034	-	0.0030	+	0.0034
		(0.0039)		(0.0039)		(0.0039)
MARKET_BETA	+	-0.0009	-	-0.0009	-	-0.0009
		(0.0008)		(0.0008)		(0.0008)
ARBITRAGE_RISK		-0.2079***		-0.2017***		-0.2079***
		(0.0492)		(0.0491)		(0.0492)
SALES_GROWTH		0.0001		0.0001		0.0001
		(0.0002)		(0.0002)		(0.0002)
OPERATING_CYCLE		-0.0084***		-0.0087***		-0.0085***
		(0.0025)		(0.0025)		(0.0025)

CAPITAL_INTENSITY	-0.0145**	-0.0146**	-0.0151**
	(0.0073)	(0.0073)	(0.0073)
CASH_RATIO	-0.0001	-0.0001	-0.0002
	(0.0012)	(0.0012)	(0.0012)
LOSS	-0.0049	-0.0053	-0.0050
	(0.0053)	(0.0053)	(0.0053)
BTM	-0.0001	-0.0001	-0.0001
	0.0022	0.0022	0.0022
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	4,693	4,693	4,693
R_2	0.90%	0.90%	0.94%

Table 25 presents the regression estimates that investigate the role of analyst decision to issue a cash flow forecast in the relation between media coverage of ESG issues and liquidity risk. The dependent variable is the accounting-related liquidity risk (i.e. Accliq_Risk) for Column (1), (2), and (3), respectively. The independent variable is the interaction term Current_RRI*DCF, Peak_RRI*DCF, and RRI_Trend*DCF for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Litigation Risk as Sensitivity Test 1

Table 26 Regressions Examining the Role of Litigation Risk on a Firm's Media coverage of ESG Issues on Analyst's Decision to Issue a Cash Flow Forecast

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.0112	+/-	0.0140	+/-	0.0145
		(0.0629)		(0.0630)		(0.8167)
ESG_INDEX	-	-0.0007***	+	-0.0006**	+	-0.0005**
		(0.0002)		(0.0002)		(0.0002)
LITIGATION_RISK		-0.3699***		-0.3717***		-0.3669***
		(0.0809)		(0.0810)		(0.0806)
ESG_LITIGATION_RISK		0.0017***		0.0013***		0.0014***
		(0.0005)		(0.0003)		(0.0005)
CFO_VOL	-	-0.1133***	+	-0.1139***	+	-0.1126***
		(0.0339)		(0.0340)		(0.0336)
CFO	-	0.1105***	-	0.1102***	+/-	0.1110***
		(0.0210)		(0.0212)		(0.0211)
ABS_ACCRUAL	+	0.1400**	-	0.1394**	+	0.1383**
		(0.0584)		(0.0585)		(0.0583)
CAP_INT	+	0.0638***	-	0.0636***	+	0.0637***
		(0.0069)		(0.0069)		(0.0069)
ALTMAN_Z	+	-0.0019***	-	-0.0020***	-	-0.0019***
		(0.0005)		(0.0005)		(0.0005)
SIZE		0.1525***		0.1526***		0.1518***
		(0.0022)		(0.0021)		(0.0022)
ANALYST_FOLLOWING		-0.3147***		-0.3147***		-0.3148***
		(0.0026)		(0.0026)		(0.0026)
BM		0.0250***		0.0250***		0.0249***

	(0.0047)	(0.0048)	(0.0047)
AGE	-0.0034***	-0.0034***	-0.0035***
	(0.0002)	(0.0002)	(0.0002)
DLOSS	0.0082	0.0087	0.0079
	(0.0063)	(0.0063)	(0.0063)
FIN_CRISIS	-0.1688***	-0.1720***	-0.1679***
	(0.0115)	(0.0117)	(0.0116)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	17,831	17,831	17,831
R_2	72.52%	72.52%	64.42%

Table 26 presents the regression estimates that investigate the role of litigation risk on the impact of a firm's media coverage of ESG issues and analyst's decision to issue a cash flow forecast for the firm. The dependent variable is the propensity to issue a cash flow forecast (i.e. DCF) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 27 Regressions Examining the Role of Litigation Risk on the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy.

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.449	+/-	-0.437*	+/-	-0.482*
		(0.254)		(0.078)		(0.270)
ESG_INDEX	-	-0.003*	+	-0.001*	+	-0.003*
		(0.001)		(0.001)		(0.002)
LITIGATION_RISK		0.305**		0.330**		0.335**
		(0.142)		(0.153)		(0.155)
ESG_LITIGATION_RISK		0.002*		0.002		0.002*
		(0.001)		(0.001)		(0.001)
BM	-	0.030	+	0.025	+	0.030
		(0.027)		(0.025)		(0.027)
CFO_VOL	-	-0.602	+	-0.594	+	-0.616
		(0.481)		(0.484)		(0.476)
CFO	-	0.043	-	0.035	+/-	0.040
		(0.180)		(0.184)		(0.181)
HORIZON	+	-0.001*	-	-0.002*	+	-0.001*
		(0.001)		(0.001)		(0.001)
LEV	+	0.127	-	0.120	+	0.130
		(0.104)		(0.100)		(0.105)
SIZE	+	0.035*	-	0.030*	-	0.036*
		(0.019)		(0.017)		(0.020)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,463		2,464		2,464

R^2	4.89%	4.77%	4.74%

Table 27 presents the regression estimates that investigate the role of litigation risk on the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 28 Second-stage Regressions Examining the Role of Litigation Risk on the Effect of a Firm's Media coverage of ESG Issues on Accounting-related Liquidity Risk

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.1312***	+/-	0.1272***	+/-	0.1323***
		(0.0197)		(0.0195)		(0.0197)
ESG_INDEX	-	0.0006***	+	0.0005***	+	0.0006***
		(0.0002)		(0.0001)		(0.0002)
LITIGATION_RISK		-0.0035		-0.0046		-0.0055
		(0.0056)		(0.0067)		(0.0056)
ESG_LITIGATION_RISK		0.0000		0.0000		0.0002
		(0.0003)		(0.0003)		(0.0003)
SIZE	-	-0.0081***	+	-0.0077***	+	-0.0083***
		(0.0014)		(0.0013)		(0.0014)
ILLIQUIDITY	-	0.0074	-	0.0078	+/-	0.0076
		(0.0091)		(0.0091)		(0.0091)
TURNOVER	+	0.2371	-	0.2210	+	0.2369
		(0.2235)		(0.2233)		(0.2234)
RETURN_MOMENTUM	+	0.0033	-	0.0031	+	0.0034
		(0.0039)		(0.0038)		(0.0039)
MARKET_BETA	+	-0.0009	-	-0.0009***	-	-0.0009
		(0.0008)		(0.0008)		(0.0008)
ARBITRAGE_RISK		-0.2088***		-0.2018***		-0.2093***
		(0.0492)		(0.0490)		(0.0492)
SALES_GROWTH		0.0001		0.0001		0.0001
		(0.0002)		(0.0002)		(0.0002)
OPERATING_CYCLE		-0.0080***		-0.0082***		-0.0079***

	(0.0025)	(0.0025)	(0.0025)
CAPITAL_INTENSITY	-0.0148**	-0.0151**	-0.0153**
	(0.0072)	(0.0072)	(0.0072)
CASH_RATIO	0.0001	-0.0001	-0.0001
	(0.0012)	(0.0012)	(0.0012)
LOSS	-0.0053	-0.0056	-0.0054
	(0.0053)	(0.0053)	(0.0053)
BTM	-0.0001	-0.0001	-0.0000
	0.0022	0.0022	0.0022
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	4,693	4,693	4,693
R_2	0.90%	0.92%	0.94%

Table 28 presents the second-stage regression estimates that investigate the role of litigation risk on the impact of a firm's media coverage of ESG issues on accounting-related liquidity risk for the firm. The dependent variable is the accounting-related liquidity risk (i.e. Accliq_Risk) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 29 Second-stage Regressions Examining the Role of Litigation Risk on the Effect of Analyst Cash Flow Forecasts and the Relation between a Firm's Media coverage of ESG Issues and Accounting-related Liquidity Risk

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.1313***	+/-	0.1278***	+/-	0.1450***
		(0.0202)		(0.0203)		(0.0217)
ESG_INDEX	-	0.0006	+	0.0003	+	0.0005
		(0.0004)		(0.0003)		(0.0005)
DCF		0.0018		0.0002		0.0013
		(0.0060)		(0.0069)		(0.0064)
LITIGATION_RISK		-0.0037		-0.0071		-0.0039
		(0.0098)		(0.0114)		(0.0120)
DCF_LIITIGATION_RISK		-0.0006		0.0026		-0.0022
		(0.0118)		(0.0139)		(0.0136)
ESG_DCF		0.0001		0.0001		0.0001
		(0.0005)		(0.0003)		(0.0005)
ESG_LITIGATION_RISK		0.0015*		0.0009*		0.0020**
		(0.0009)		(0.0006)		(0.0010)
ESG_DCF_LITIGATION		-0.0017*		-0.0010		-0.0021*
		(0.0008)		(0.0006)		(0.0009)
SIZE	-	-0.0082***	+	-0.0077***	+	-0.0087***
		(0.0016)		(0.0015)		(0.0016)
ILLIQUIDITY	-	0.0074	-	0.0080	+/-	0.0079
		(0.0091)		(0.0091)		(0.0095)
TURNOVER	+	0.2274	-	0.2220	+	0.2217
		(0.2255)		(0.2252)		(0.2364)
RETURN_MOMENTUM	+	0.0037	-	0.0032	+	0.0032
		(0.0039)		(0.0039)		(0.0041)

MARKET_BETA	+	-0.0008	-	-0.0009	-	-0.0010
		(0.0008)		(0.0008)		(0.0009)
ARBITRAGE_RISK		-0.2115***		-0.2038***		-0.2018***
		(0.0493)		(0.0492)		(0.0525)
SALES_GROWTH		0.0001		0.0001		0.0001
		(0.0002)		(0.0002)		(0.0002)
OPERATING_CYCLE		-0.0081***		-0.0083***		-0.0094***
		(0.0025)		(0.0025)		(0.0027)
CAPITAL_INTENSITY		-0.0155**		-0.0156**		-0.0213**
		(0.0073)		(0.0073)		(0.0077)
CASH_RATIO		-0.0001		-0.0001		-0.0005
		(0.0012)		(0.0012)		(0.0012)
LOSS		-0.0052		-0.0056		-0.0051
		(0.0053)		(0.0053)		(0.0056)
BTM		-0.0003		-0.0003		-0.0006
		(0.0022)		(0.0022)		(0.0023)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		4,693		4,693		4,369
R_2		0.93%		0.92%		1.11%

Table 29 reports the second-stage regression estimates that investigate the role of litigation risk on the effect of cash flow forecasts and the impact of a firm's media coverage of ESG issues on liquidity risk for the firm. The dependent variable is the accounting-related liquidity risk (i.e. Accliq_Risk) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

HHI As Sensitivity Test 2

Table 30 Regressions Examining the Role of HHI on the Effect of a Firm's Media coverage of ESG Issues and Analyst's Decision to Issue a Cash Flow Forecast

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.0250	+/-	0.0430	+/-	0.0292
		(0.0877)		(0.0882)		(0.0877)
ESG_INDEX	-	-0.0012***	+	-0.0009***	+	-0.0010***
		(0.0003)		(0.0002)		(0.0003)
HHI		-0.3697		-0.5072		-0.3992
		(0.4849)		(0.5009)		(0.4978)
ESG_HHI		0.0417***		0.0311***		0.0407***
		(0.0085)		(0.0054)		(0.0085)
CFO_VOL	-	-0.1086***	+	-0.1087***	+	-0.1083***
		(0.0316)		(0.0315)		(0.0315)
CFO	-	0.1155***	-	0.1169***	+/-	0.1163***
		(0.0212)		(0.0212)		(0.0213)
ABS_ACCRUAL	+	0.1348**	-	0.1332**	+	0.1336**
		(0.0583)		(0.0583)		(0.0583)
CAP_INT	+	0.0638***	-	0.0639***	+	0.0637***
		(0.0069)		(0.0069)		(0.0069)
ALTMAN_Z	+	-0.0019***	-	-0.0019***	-	-0.0019***
		(0.0005)		(0.0005)		(0.0005)
SIZE		0.1529***		0.1530***		0.1522***
		(0.0022)		(0.0021)		(0.0022)
ANALYST_FOLLOWING		-0.3152***		-0.3152***		-0.3153***
		(0.0026)		(0.0026)		(0.0026)
BM		0.0251***		0.0251***		0.0249***

	(0.0047)	(0.0047)	(0.0047)
AGE	-0.0035***	-0.0035***	-0.0035***
	(0.0002)	(0.0002)	(0.0002)
DLOSS	0.0073	0.0075	0.0069
	(0.0063)	(0.0063)	(0.0063)
FIN_CRISIS	-0.1696***	-0.1730***	-0.1688***
	(0.0115)	(0.0116)	(0.0115)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	17,819	17,819	17,819
R_2	72.54%	72.54%	72.53%

Table 30 presents the regression estimates that investigate the Role of HHI on the impact of a firm's media coverage of ESG issues and analyst's decision to issue a cash flow forecast for the firm. The dependent variable is the propensity to issue a cash flow forecast (i.e. DCF) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 31 Regressions Examining the Role of HHI on the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy.

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.3476*	+/-	-0.3059*	+/-	-0.3528*
		(0.1929)		(0.1759)		(0.1961)
ESG_INDEX	-	-0.0044*	+	-0.0018*	+	-0.0044*
		(0.0024)		(0.0010)		(0.0023)
HHI		5.0651		-4.2793		-4.8259
		(3.2802)		(2.8734)		(3.0630)
ESG_HHI		0.0973*		0.0438		0.0894*
		(0.0562)		(0.0267)		(0.0495)
BM	-	0.0326	+	0.0261	+	0.0342
		(0.0325)		(0.0295)		(0.0332)
CFO_VOL	-	-0.5453	+	-0.5551	+	-0.5798
		(0.5060)		(0.5060)		(0.4944)
CFO	-	0.0161	-	0.0191	+/-	0.0276
		(0.1941)		(0.1934)		(0.1890)
HORIZON	+	-0.0016*	-	-0.0016*	+	-0.0015*
		(0.0008)		(0.0008)		(0.0008)
LEV	+	0.1413	-	0.1295	+	0.1445
		(0.1122)		(0.1066)		(0.1137)
SIZE	+	0.0363*	-	0.0306*	-	0.0373*
		(0.0207)		(0.0178)		(0.0212)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,426		2,426		2,426
R_2		5.15%		4.98%		5.17%

Table 31 presents the regression estimates that investigate the role of HHI on the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Volatile Years as Sensitivity Test 3

Table 32 Regressions Examining the Role of Volatile Years on the Effect of a Firm's Media coverage of ESG Issues and Analyst's Decision to Issue a Cash Flow Forecast

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.0075	+/-	0.0072	+/-	0.0117
		(0.0637)		(0.0638)		(0.0634)
ESG_INDEX	-	-0.0002	+	-0.0001	+	0.0000
		(0.0002)		(0.0002)		(0.0002)
HIGH_VOL		-0.1048***		-0.1007***		-0.1061***
		(0.0117)		(0.0123)		(0.0118)
ESG_HIGH_VOL		-0.0015***		-0.0010***		-0.0012***
		(0.0004)		(0.0003)		(0.0004)
CFO_VOL	-	-0.1131***	+	-0.1134***	+	-0.1126***
		(0.0336)		(0.0336)		(0.0334)
CFO	-	0.1105***	-	0.1102***	+/-	0.1108***
		(0.0211)		(0.0211)		(0.0212)
ABS_ACCRUAL	+	0.1375**	-	0.1369**	+	0.1357**
		(0.0583)		(0.0584)		(0.0583)
CAP_INT	+	0.0642***	-	0.0640***	+	0.0639***
		(0.0069)		(0.0069)		(0.0069)
ALTMAN_Z	+	-0.0019***	-	-0.0019***	-	-0.0019***
		(0.0005)		(0.0005)		(0.0005)
SIZE		0.1524***		0.1524***		0.1517***
		(0.0022)		(0.0021)		(0.0022)
ANALYST_FOLLOWING		-0.3154***		-0.3153***		-0.3153***
		(0.0026)		(0.0026)		(0.0026)
BM		0.0249***		0.0250***		0.0249***

	(0.0047)	(0.0048)	(0.0047)
AGE	-0.0034***	-0.0034***	-0.0034***
	(0.0002)	(0.0002)	(0.0002)
DLOSS	0.0083	0.0083	0.0078
	(0.0063)	(0.0063)	(0.0063)
FIN_CRISIS	-0.0158***	-0.0553***	-0.0519***
	(0.0084)	(0.0084)	(0.0084)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	17,831	17,831	17,831
R_2	72.52%	72.52%	72.50%

Table 32 presents the regression estimates that investigate the role of volatile years on the impact of a firm's media coverage of ESG issues and analyst's decision to issue a cash flow forecast for the firm. The dependent variable is the propensity to issue a cash flow forecast (i.e. DCF) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 33 Second-stage Regressions Examining the Role of Volatile Years on the Effect of a Firm's Media coverage of ESG Issues on Accounting-related Liquidity Risk

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.1352***	+/-	0.1291***	+/-	0.1331***
		(0.0204)		(0.0202)		(0.0204)
ESG_INDEX	-	0.0003*	+	0.0000	+	0.0003
		(0.0002)		(0.0001)		(0.0002)
HIGH_VOL		-0.0750***		-0.0799***		-0.0734***
		(0.0074)		(0.0078)		(0.0073)
ESG_HIGH_VOL		-0.0010*		-0.0002		-0.0015**
		(0.0006)		(0.0004)		(0.0006)
SIZE	-	-0.0063***	+	-0.0052***	+	-0.0059***
		(0.0015)		(0.0014)		(0.0015)
ILLIQUIDITY	-	0.0133	-	0.0136	+/-	0.0134
		(0.0091)		(0.0091)		(0.0091)
TURNOVER	+	0.2415	-	0.2322	+	0.2341
		(0.2319)		(0.2319)		(0.2318)
RETURN_MOMENTUM	+	-0.0019	-	-0.0025	+	-0.0022
		(0.0043)		(0.0042)		(0.0043)
MARKET_BETA	+	0.0000	-	-0.0001	-	0.0000
		(0.0009)		(0.0009)		(0.0009)
ARBITRAGE_RISK		-0.1694***		-0.1633***		-0.1645***
		(0.0529)		(0.0528)		(0.0530)
SALES_GROWTH		0.0001		0.0001		0.0001
		(0.0002)		(0.0002)		(0.0002)
OPERATING_CYCLE		-0.0087***		-0.0086***		-0.0088***
		(0.0026)		(0.0026)		(0.0026)

CAPITAL_INTENSITY	-0.0154**	-0.0148**	-0.0155**
	(0.0073)	(0.0074)	(0.0074)
CASH_RATIO	-0.0014	-0.0014	-0.0014
	(0.0012)	(0.0012)	(0.0012)
LOSS	-0.0069	-0.0061	-0.0066
	(0.0055)	(0.0055)	(0.0055)
BTM	0.0007	0.0009	0.0008
	0.0024	0.0024	0.0024
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	3,867	3,867	3,867
R_2	4.53%	4.41%	4.59%

Table 33 presents the second-stage regression estimates that investigate the role of volatile years on the impact of a firm's media coverage of ESG issues on liquidity risk for the firm. The dependent variable is the accounting-related liquidity risk (i.e. Accliq_Risk) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 34 Second-stage Regressions Examining the Role of Volatile Years on the Effect of Analyst Cash Flow Forecasts on the relation between a Firm's Media coverage of ESG Issues and Accounting-related Liquidity Risk

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.1306**	+/-	0.1234***	+/-	0.1480***
		(0.0207)		(0.0208)		(0.0225)
ESG_INDEX	-	0.0004	+	0.0001	+	0.0000
		(0.0004)		(0.0003)		(0.0005)
DCF		0.0092		0.0102		0.0020
		(0.0061)		(0.0071)		(0.0078)
HIGH_VOL		-0.0743***		-0.0794***		-0.0220***
		(0.0074)		(0.0078)		(0.0143)
DCF_HIGH_VOL		-0.0820***		-0.0825***		-0.0746***
		(0.0157)		(0.0165)		(0.0166)
ESG_DCF		-0.0001		-0.0001		0.0002
		(0.0005)		(0.0003)		(0.0005)
ESG_HIGH_VOL		0.0023		0.0027**		0.0058**
		(0.0024)		(0.0014)		(0.0028)
ESG_DCF_HIGH_VOL		-0.0026		-0.0026*		-0.0068**
		(0.0025)		(0.0014)		(0.0028)
SIZE	-	-0.0063***	+	-0.0051***	+	-0.0062***
		(0.0016)		(0.0016)		(0.0017)
ILLIQUIDITY	-	0.0137	-	0.0164	+/-	0.0182*
		(0.0091)		(0.0091)		(0.0095)
TURNOVER	+	0.2202	-	0.2077	+	0.2037
		(0.2328)		(0.2327)		(0.2451)
RETURN_MOMENTUM	+	-0.0010	-	-0.0014	+	-0.0027
		(0.0042)		(0.0042)		(0.0045)

MARKET_BETA	+	0.0000	-	0.0000	-	0.0000
		(0.0009)		(0.0009)		(0.0009)
ARBITRAGE_RISK		-0.1686***		-0.1615***		-0.1587***
		(0.0528)		(0.0527)		(0.0566)
SALES_GROWTH		0.0001		0.0001		0.0001
		(0.0002)		(0.0002)		(0.0002)
OPERATING_CYCLE		-0.0089***		-0.0089***		-0.0103**
		(0.0026)		(0.0026)		(0.0028)
CAPITAL_INTENSITY		-0.0151**		-0.0147**		-0.0174**
		(0.0074)		(0.0074)		(0.0078)
CASH_RATIO		-0.0013		-0.0014		-0.0015
		(0.0012)		(0.0012)		(0.0012)
LOSS		-0.0066		-0.0058		-0.0071
		(0.0055)		(0.0055)		(0.0059)
BTM		0.0019		0.0026		0.0024
		(0.0024)		(0.0024)		(0.0025)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		3,867		3,867		3,598
R_2		5.19%		5.21%		5.58%

Table 34 presents the second-stage regression estimates that investigate the role of volatile years on the impact of a firm's media coverage of ESG issues on liquidity risk for the firm. The dependent variable is the accounting-related liquidity risk (i.e. Accliq_Risk) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Institutional Ownership as Sensitivity Test 4

Table 35 Regressions Examining the Role of Institutional Ownership on the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy.

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.4584*	+/-	-0.4433*	+/-	-0.4671*
		(0.2587)		(0.2585)		(0.2690)
ESG_INDEX	-	-0.0079**	+	-0.0051**	+	-0.0102**
		(0.0039)		(0.0022)		(0.0047)
INST_OWN		0.2486**		0.2183*		0.2225*
		(0.1228)		(0.1192)		(0.1166)
ESG_INST_OWN		0.0072*		0.0054**		0.0100**
		(0.0037)		(0.0023)		(0.0046)
BM	-	0.0219	+	0.0197	+	0.0223
		(0.0237)		(0.0224)		(0.0240)
CFO_VOL	-	-0.5607	+	-0.5628	+	-0.5972
		(0.4841)		(0.4843)		(0.4709)
CFO	-	-0.0173	-	-0.0223	+/-	-0.0183
		(0.2024)		(0.2042)		(0.2024)
HORIZON	+	-0.0011*	-	-0.0012*	+	-0.0012*
		(0.0007)		(0.0008)		(0.0007)
LEV	+	0.1875	-	0.1893	+	0.1880
		(0.1309)		(0.1303)		(0.1313)
SIZE	+	0.0232	-	0.0188	-	0.0240*
		(0.0150)		(0.0125)		(0.0154)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,395		2,395		2,395

R^2	5.52%	5.43%	5.60%

Table 35 presents the regression estimates that investigate the role of institutional ownership on the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Firm Risk as Sensitivity Test 5

Table 36 Regressions Examining the Role of Firm Risk on the Effect of a Firm's Media coverage of ESG Issues and Analyst's Decision to Issue a Cash Flow Forecast

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.0779	+/-	0.0687	+/-	-0.0781
		(0.0612)		(0.0608)		(0.0619)
ESG_INDEX	-	-0.0015***	+	-0.0010***	+	-0.0015**
		(0.0003)		(0.0002)		(0.0003)
FIRM_RISK		1.2411***		1.1477***		1.1629***
		(0.2124)		(0.2241)		(0.2111)
ESG_FIRM_RISK		0.0413***		0.0258***		0.0517***
		(0.0128)		(0.0084)		(0.0129)
CFO_VOL	-	-0.1090***	+	-0.1098***	+	-0.1079***
		(0.0330)		(0.0332)		(0.0326)
CFO	-	0.1338***	-	0.1344***	+/-	0.1352***
		(0.0321)		(0.0332)		(0.0324)
ABS_ACCRUAL	+	0.0657**	-	0.0698	+	0.0668
		(0.0618)		(0.0615)		(0.0621)
CAP_INT	+	0.0589***	-	0.0587***	+	0.0589***
		(0.0068)		(0.0068)		(0.0068)
ALTMAN_Z	+	-0.0020***	-	-0.0020***	-	-0.0020***
		(0.0005)		(0.0006)		(0.0005)
SIZE		0.1570***		0.1569***		0.1563***
		(0.0023)		(0.0023)		(0.0023)
ANALYST_FOLLOWING		-0.3152***		-0.3152***		-0.3152***
		(0.0026)		(0.0026)		(0.0026)
BM		0.0248***		0.0248***		0.0249***

	(0.0049)	(0.0049)	(0.0049)
AGE	-0.0033***	-0.0033***	-0.0033***
	(0.0002)	(0.0002)	(0.0002)
DLOSS	0.0029	0.0030	0.0024
	(0.0065)	(0.0065)	(0.0065)
FIN_CRISIS	-0.1901**	-0.1921***	-0.1887***
	(0.0117)	(0.0118)	(0.0117)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	17,688	17,688	17,688
R_2	72.68%	72.68%	72.68%

Table 36 presents the regression estimates that investigate the role of firm risk on the impact of a firm's media coverage of ESG issues and analyst's decision to issue a cash flow forecast for the firm. The dependent variable is the propensity to issue a cash flow forecast (i.e. DCF) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 37 Regressions Examining the Role of Firm Risk on the Effect of a Firm's Media coverage of ESG Issues on Analyst Cash Flow Forecast Accuracy.

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	-0.4576*	+/-	-0.4206*	+/-	-0.4836*
		(0.2583)		(0.2404)		(0.2705)
ESG_INDEX	-	-0.0001	+	-0.0001*	+	0.0001
		(0.0009)		(0.0005)		(0.0008)
FIRM_RISK		-0.2407		-0.4034		-0.1039
		(0.5146)		(0.5177)		(0.4931)
ESG_FIRM_RISK		-0.1231*		-0.0423		-0.1436*
		(0.0659)		(0.0265)		(0.0723)
BM	-	0.0377	+	0.0351	+	0.0383
		(0.0315)		(0.0301)		(0.0317)
CFO_VOL	-	-0.5553	+	-0.5510	+	-0.5648
		(0.4784)		(0.4843)		(0.4705)
CFO	-	0.0498	-	0.0521	+/-	0.0456
		(0.1819)		(0.1810)		(0.1826)
HORIZON	+	-0.0015*	-	-0.0016*	+	-0.0014*
		(0.0008)		(0.0008)		(0.0008)
LEV	+	0.1316	-	0.1309	+	0.1351
		(0.1070)		(0.1064)		(0.1085)
SIZE	+	0.0325*	-	0.0277*	-	0.0337*
		(0.0185)		(0.0160)		(0.0190)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		2,452		2,452		2,452
R_2		5.03%		4.83%		4.74%

Table 37 presents the regression estimates that investigate the role of firm risk on the impact of a firm's media coverage of ESG issues on analyst cash flow forecast accuracy. The dependent variable is the analyst cash flow forecast accuracy (i.e. CFFA) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 38 Second-stage Regressions Examining the Role of Firm Risk on the Effect of a Firm's Media coverage of ESG Issues on Accounting-related Liquidity Risk

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.1294***	+/-	0.1248***	+/-	0.1281***
		(0.0212)		(0.0211)		(0.0212)
ESG_INDEX	-	0.0006**	+	0.0003	+	0.0007**
		(0.0003)		(0.0002)		(0.0003)
FIRM_RISK		0.1145		0.0559		0.1653
		(0.2135)		(0.2378)		(0.2123)
ESG_FIRM_RISK		0.0006		0.0049		-0.0058
		(0.0123)		(0.0085)		(0.0124)
SIZE	-	-0.0078***	+	-0.0070***	+	-0.0077***
		(0.0015)		(0.0014)		(0.0015)
ILLIQUIDITY	-	0.0088	-	0.0094	+/-	0.0090
		(0.0092)		(0.0092)		(0.0092)
TURNOVER	+	0.3145	-	0.2886	+	0.3244
		(0.2376)		(0.2371)		(0.2380)
RETURN_MOMENTUM	+	0.0036	-	0.0034	+	0.0033
		(0.0045)		(0.0045)		(0.0034)
MARKET_BETA	+	-0.0002	-	-0.0002***	-	-0.0002
		(0.0009)		(0.0009)		(0.0009)
ARBITRAGE_RISK		-0.2364***		-0.2315***		-0.2357***
		(0.0604)		(0.0603)		(0.0604)
SALES_GROWTH		0.0001		0.0001		0.0001
		(0.0002)		(0.0002)		(0.0002)
OPERATING_CYCLE		-0.0086***		-0.0089***		-0.0086***
		(0.0026)		(0.0026)		(0.0026)

CAPITAL_INTENSITY	-0.0181**	-0.0183**	-0.0183**
	(0.0076)	(0.0076)	(0.0076)
CASH_RATIO	-0.0006	-0.0007	-0.0007
	(0.0012)	(0.0012)	(0.0012)
LOSS	-0.0040	-0.0043	-0.0037
	(0.0057)	(0.0057)	(0.0057)
BTM	0.0022	-0.0023	0.0022
	(0.0024)	(0.0024)	(0.0025)
Year fixed effect	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes
N	3,849	3,849	3,849
R_2	0.95%	0.88%	0.90%

Table 38 presents the second-stage regression estimates that investigate the role of firm risk on the impact of a firm's media coverage of ESG issues on liquidity risk for the firm. The dependent variable is the accounting-related liquidity risk (i.e. Accliq_Risk) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

Table 39 Second-stage Regressions Examining the Effect of a Firm's Media coverage of ESG Issues on Accounting-related Liquidity Risk

	(1)		(2)		(3)	
Variables	Predicted Sign	IV = Current_RRI	Predicted Sign	IV = Peak_RRI	Predicted Sign	IV = RRI_Trend
Intercept	+/-	0.1088***	+/-	0.1068***	+/-	0.1045***
		(0.0224)		(0.0232)		(0.0250)
ESG_INDEX	-	0.0004	+	0.0001	+	0.0014
		(0.0007)		(0.0004)		(0.0008)
DCF		0.0319***		0.0290		0.0486***
		(0.0104)		(0.0123)		(0.0130)
FIRM_RISK		0.9738***		0.8872**		1.5810***
		(0.3394)		(0.3952)		(0.3946)
DCF_FIRM_RISK		-1.3237***		-1.2776***		-1.9719***
		(0.3898)		(0.4577)		(0.4416)
ESG_DCF		0.0002		0.0002		-0.0008
		(0.0008)		(0.0005)		(0.0009)
ESG_FIRM_RISK		0.0114		0.0117		-0.0264
		(0.0242)		(0.0156)		(0.0299)
ESG_DCF_FIRM_RISK		-0.0103		-0.0081		0.0245
		(0.0282)		(0.0188)		(0.0332)
SIZE	-	-0.0083***	+	-0.0076***	+	-0.0087***
		(0.0017)		(0.0016)		(0.0018)
ILLIQUIDITY	-	0.0104	-	0.0113	+/-	0.0126
		(0.0092)		(0.0093)		(0.0097)
TURNOVER	+	0.3802	-	0.3683	+	0.3796
		(0.2397)		(0.2395)		(0.2530)
RETURN_MOMENTUM	+	0.0028	-	0.0024	+	0.0015
		(0.0045)		(0.0045)		(0.0048)

MARKET_BETA	+	-0.0003	-	-0.0003	-	-0.0004
		(0.0009)		(0.0009)		(0.0008)
ARBITRAGE_RISK		-0.2326***		-0.2292***		-0.2168***
		(0.0603)		(0.0603)		(0.0647)
SALES_GROWTH		0.0001		0.0001		0.0001
		(0.0002)		(0.0002)		(0.0002)
OPERATING_CYCLE		-0.0083***		-0.0085***		-0.0093***
		(0.0026)		(0.0026)		(0.0028)
CAPITAL_INTENSITY		-0.0158**		-0.0157**		-0.0184**
		(0.0077)		(0.0077)		(0.0081)
CASH_RATIO		-0.0007		-0.0007		-0.0008
		(0.0012)		(0.0012)		(0.0013)
LOSS		-0.0049		-0.0052		-0.0043
		(0.0057)		(0.0057)		(0.0061)
BTM		0.0045*		0.0045*		0.0045*
		(0.0025)		(0.0025)		(0.0027)
Year fixed effect		Yes		Yes		Yes
Industry fixed effect		Yes		Yes		Yes
N		3,894		3,849		3,580
R_2		1.36%		1.31%		1.58%

Table 39 presents the second-stage regression estimates that investigate the role of firm risk on the impact of a firm's media coverage of ESG issues on liquidity risk for the firm. The dependent variable is the accounting-related liquidity risk (i.e. Accliq_Risk) for Column (1), (2), and (3), respectively. The independent variable is Current_RRI, Peak_RRI, and RRI_Trend for Column (1), (2), and (3), respectively. Variables are defined in Appendix II. Standard errors are reported in parentheses. *, **, *** denote significance at 10%, 5%, and 1%, respectively.

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