# ESG Considerations in Acquisitions and Divestitures:

# Corporate Responses to Mandatory ESG Disclosure[*]

Tong Li[†]        Qilin Peng[‡]        Luping Yu[§]

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## Abstract

As demands for environmental, social, and governance (ESG) data grow, mandatory ESG disclosure regulations are becoming more prevalent globally. However, corporate responses to these regulations remain unclear. Our ChatGPT-based analysis reveals a notable increase in ESG-related discussions during merger and acquisition conference calls subsequent to the implementation of ESG disclosure mandates. In conjunction with these heightened discussions, firms strategically modify their portfolio of productive assets through acquisitions and divestitures. They acquire assets with superior ESG performance and divest underperforming assets, particularly in the wake of negative ESG incidents. Firms subjected to these mandates are willing to offer higher premiums when acquiring assets with strong ESG attributes and to accept discounts when divesting assets with weaker ESG performance. Notably, our findings demonstrate that acquisitions are more effective than divestitures in driving improvement in ESG performance and enhancing overall firm value.

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# 1 Introduction

Environmental, social, and governance (ESG) considerations in investment decisions have grown significantly. These factors aim to ensure that corporations not only achieve financial success but also demonstrate social and environmental responsibility. The heightened investor interest in ESG issues has resulted in a surge in demand for relevant information.[1] In response to this demand, regulatory bodies worldwide have introduced ESG disclosure mandates. These mandates require firms to disclose their ESG practices, with the aim of enhancing corporate transparency and contributing to broader sustainability objectives (Krueger, Sautner, Tang, and Zhong, 2023; Christensen, Hail, and Leuz, 2021). However, the effectiveness of these regulations depends greatly on how firms react to the disclosure requirements. In this paper, we investigate corporate reactions to ESG disclosure mandates by focusing on mergers and acquisitions (M&As) and divestitures, all of which represent critical decisions in corporate asset allocation. By examining these actions, we provide insights into how firms navigate and adapt to the evolving landscape of ESG reporting obligations.

M&As have long been acknowledged as crucial tools for corporations to achieve growth, undertake restructuring, and pursue diversification. Prior studies have extensively explored the effects of M&As on stock returns (e.g., Fuller, Kathleen, and Stegemoller, 2002), corporate governance (e.g., Wang and Xie, 2009), and employee welfare (e.g., Gehrke, Maug, Obernberger, and Schneider, 2022). In recent years, there has been a growing emphasis on integrating ESG factors into M&A activities.[2] By directing investments towards entities that actively enforce ESG policies, acquiring firms can strengthen their portfolios while concurrently promoting a more sustainable and equitable economic landscape. The 2022 M&A Trends Survey conducted by Deloitte substantiates this trend, revealing that over 70% of participating organizations incorporated ESG metrics into their target evaluations and reevaluated their portfolios from an ESG perspective.[3]

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[1] For example, according to the 2020 Global Sustainable Investment Review, over $35 trillion has been invested with explicit ESG goals as of the beginning of 2020. See http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf
[2] https://corpgov.law.harvard.edu/2020/02/20/the-coming-impact-of-esg-on-ma/
[3] https://www2.deloitte.com/content/dam/Deloitte/us/Documents/mergers-acqisitions/us-deloitte-2022-mna-trends-report.pdf

As the counterpart to acquiring assets through M&As, divestitures also serve as a critical tool for asset restructuring. These deals play a pivotal role in enhancing liquidity, refining business strategies, and improving operational efficiency. Similar to the growing significance of ESG considerations in M&A activities, ESG practices are increasingly integral to divestiture decisions. For instance, companies are beginning to utilize ESG due diligence to evaluate potential risks associated with existing assets and pinpoint potential liabilities arising from operations. A study conducted by the UN Principles for Responsible Investment (PRI) identified the lack of opportunities for transitioning to a more sustainable business model as a crucial factor in divestment considerations.[4] Given the favorable perception of divesting from industries or assets exhibiting substandard environmental or social practices, companies are increasingly integrating ESG criteria into their divestiture strategies.

Although ESG considerations have become increasingly important, it remains an open empirical question whether and how mandatory ESG disclosure affects M&As and divestitures. On the one hand, the obligation to comply with mandated ESG reporting may create several incentives for firms to restructure their productive assets for an enhanced ESG profile. First, with the aim to increase the transparency of corporate ESG practices, ESG disclosure mandates tend to reduce stakeholders' costs associated with monitoring firms' ESG activities. Improved transparency, coupled with the ability of stakeholders and investors to cost-effectively compare firms, is likely to heighten societal pressure (Darendeli, Fiechter, Hitz, and Lehmann, 2022). This pressure could potentially accelerate corporations' efforts to enhance their ESG image.[5] Secondly, mandatory ESG reporting can influence firms' cost-benefit tradeoffs. If the costs associated with mandatory ESG reporting outweigh the benefits, firms are expected to make adjustments and may even abandon certain activities.[6] Firms with high costs of maintaining strong ESG performance and high reputational risks are more likely to exit the market, whereas

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[4] https://www.unpri.org/download?ac=16109
[5] Social activists, policymakers, and consumers can influence businesses through various means such as public criticism (Dyck, Volchkova, and Zingales, 2008), boycotts, or imposing sustainability requirements in the supply chain (Dai, Liang, and Ng, 2021). If the costs of not aligning their ESG activities with certain stakeholders are too high, firms are motivated to adjust their ESG activities in response.
[6] Christensen et al. (2017) discovered that companies that are registered with the SEC and thus obligated to disclose mine-safety information are more likely to close risky mine sites compared to unregulated companies.

those with lower costs and reputational risks are more likely to enter or expand. In an attempt to enhance ESG profiles and mitigate exposure to ESG-related risks, firms can choose to make adjustments through real investment decisions (e.g., Durnev and Mangen, 2007; Beatty, Liao, and Yu, 2013). In particular, firms may be more likely to acquire companies with strong ESG performance and show reluctance towards investing in companies with weak ESG practices. Firms may also choose to divest assets with poor ESG records, such as facilities releasing toxic substances or those with substandard workplace safety measures.

On the other hand, mandatory ESG disclosure could exert an opposite impact on firms' asset allocations. First, the enactment of compulsory ESG disclosure raises regulatory compliance costs for companies, resulting in a short-term decline in firm profitability (e.g., Chen, Hung, and Wang, 2018; Fiechter, Hitz, and Lehmann, 2022). This, in turn, may limit firms' capacity to purchase green assets, as they may not have sufficient funds to do so. Second, the potential benefits of improving ESG profiles in response to mandated reporting may be limited if the costs of making changes in real asset markets are prohibitively high (e.g., Pástor, Stambaugh, and Taylor, 2021, 2022). Following the introduction of ESG disclosure mandates, the increased (decreased) demand for green (brown) assets may result in higher premiums (discounts) for the purchase (disposal) of assets with strong (weak) ESG performance, which could decrease the attractiveness of restructuring productive assets.

To investigate the impact of mandatory ESG disclosure on acquisitions and divestitures, we rely on a dataset of global M&As and divestitures from 2000 to 2020. We exploit the staggered adoption of mandatory ESG disclosure regulations around the world and employ a difference-in-differences (DID) approach to identify causal effects. We begin our empirical analysis by investigating the awareness of ESG issues in merger and acquisition conference calls. Our findings reveal a notable surge in ESG-related discussions during these meetings, which signifies an amplified significance of ESG factors in mergers and acquisitions. We further document that the real impacts of these regulations exist in real asset markets. In particular, we show that firms acquire 20.05% more green patents from target firms after the implementation of ESG disclosure

mandates. By contrast, firms facing these requirements reduce their acquisitions of target firms that have recently experienced negative ESG incidents. We also find a significant increase (decrease) in the number of target firms with green patents (negative ESG incidents) following the implementation of ESG disclosure mandates in acquirer countries. Our findings are robust to alternative estimation methods and after accounting for potential biases associated with heterogeneous treatment effects. We verify that the acquisition activities of firms in the treatment and control countries share common trends before the introduction of mandatory ESG disclosure requirements. We further show that the timing of adopting these regulations is exogenous to acquisition and divestiture activities in a given country and preexisting country-level conditions. Moreover, we conduct placebo tests and find that our baseline results are unlikely driven by chance.

We also perform several cross-sectional tests and find additional support for our baseline results. For example, we find that firms in countries adopting disclosure mandates tend to acquire more (fewer) target firms from countries with strong (weak) environmental and social performances. Moreover, the effects of ESG disclosure mandates on corporate acquisitions become more pronounced when the disclosure is supposed to attract more public attention. In particular, we find stronger results among firms that are required to disclose ESG information in a standalone sustainability report rather than in financial statements. Besides, the effects of ESG disclosure mandates on corporate acquisitions become more pronounced with stricter law enforcement and higher analyst coverage but are mitigated by acquirers' financial constraints. Overall, these findings indicate that firms respond to mandatory ESG disclosure requirements by acquiring assets that help improve their ESG profiles.

We then examine the divestment of corporate assets. Our estimates from difference-in-differences regressions show that, compared to firms in countries without mandatory disclosure regulations, companies in countries with these regulations sell more assets in the post-mandate period. Importantly, this effect intensifies if the divested assets have recently experienced more negative ESG incidents. The divestment of poor ESG assets increases in terms of both number

and dollar value. The results suggest that when firms are required to disclose their ESG performance, they tend to divest assets with poor ESG records, a reaction that is consistent with firms seeking to enhance their ESG performance.

In addition, we consider the effects of mandatory ESG disclosure on the pricing of acquisitions and divestitures. If firms' restructuring in real assets arises from the pressure to improve their ESG performance, we expect that firms are willing to offer higher prices to buy desirable assets with strong ESG records and accept lower prices to dispose of problematic assets with poor ESG profiles. Our empirical results confirm this conjecture. Specifically, we find that companies mandated to report on ESG issues pay higher premiums when acquiring target firms with more green patents but accept greater discounts when divesting assets with more negative ESG incidents.

Exploring the mechanisms, we document strong supporting evidence that mandatory ESG disclosure regulations affect acquisitions and divestitures through the channels of financing costs and shareholder pressure. We show that firms which adjust their assets through acquisitions and divestitures following the implementation of ESG disclosure mandates experience a considerable decrease in financing costs and a substantial increase in institutional ownership. These findings suggest that firms acquire more green assets and sell more brown assets following the enactment of ESG disclosure mandates potentially because good ESG performance brings firms lower financing costs and attracts more institutional investors.

Finally, we assess the impacts of post-mandate asset restructuring on firms' ESG performance and firm value. To effectively distinguish transient changes from long-run effects, we estimate dynamic effect regressions. We find that acquisitions following ESG disclosure mandates boost firms' ESG performance and could generate value for the firm even in the long run. However, although firms disposing of poor-ESG assets after the regulations experience a temporary increase in ESG scores, the short-term enhancement in ESG performance does not translate to a higher valuation for the divesting firms. These results suggest that after mandatory

ESG disclosure requirements, firms benefit more from acquiring strong ESG assets than from divesting weak ESG assets.

Our paper makes three contributions to the literature. First, we contribute to the growing literature on the impacts of global mandatory ESG disclosure.[7] Krueger et al. (2023) document an improvement in firms' information environment and a reduction in their negative ESG incidents after disclosure mandates are enacted. Lu, Peng, Shin, and Yu (2022) suggest that these mandates lead firms to evade ESG obligations by restructuring their global supplier network. Gibbons (2023) shows that disclosure of E&S information attracts long-term institutional investors with E&S preferences, resulting in higher equity financing and heightened emphasis on long-term projects. Moreover, Wang (2023) focuses on ESG disclosure mandates on banks and documents positive spillover effects on borrowing firms' environmental and social performance. Unlike these studies, we investigate the effects of mandatory ESG disclosure regulations on real asset markets, considering both the purchase and sale of corporate assets. As a result, our results provide a more comprehensive understanding of the role that ESG disclosure mandates play in corporate asset allocations.

More broadly, our paper is related to recent studies that document the investment effects of various non-financial disclosure regulations, including extraction payment disclosures in Europe and Canada (Rauter, 2020), greenhouse gas disclosure in the United States (Tomar, 2023), and disclosure of supply chain due diligence in California (She, 2022). Our analysis differs distinctly from the existing research. Our paper focuses on mandatory disclosure of firms' ESG practices, which becomes increasingly important for investors' decisions (e.g., Christensen et al., 2021). In addition, we analyze ESG disclosure regulations around the world, as opposed to a specific geographical area, which allows us to reach more comprehensive and robust conclusions.

Second, we add to the literature on mergers and acquisitions by showing how ESG reporting regulations may impact corporate acquisition decisions. Prior studies have examined

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[7] Earlier research has mostly examined single-country or single-region regulations. For example, Jouvenot and Krueger (2019) and Downar et al. (2021) show that carbon disclosure requirements in the UK reduce firms' carbon emissions. Chen et al. (2018) document significant improvements in air and water quality of Chinese cities after local firms are required to disclose activities related to corporate social responsibility (CSR). Fiechter et al. (2022) show that firms in the European Union engage in more CSR activities due to a CSR reporting mandate.

incentives for firms to pursue mergers and acquisitions. The prominent contributing factors to corporate acquisition activities include, among others, risk management considerations (Garfinkel and Hankins, 2011), managerial preferences (Jenter and Lewellen, 2015), and policy uncertainty (Bonaime, Gulen, and Ion, 2018). Cross-border mergers and acquisitions involve transactions between companies from different countries and therefore are influenced by additional drivers, such as national cultures (Ahern, Daminelli, and Fracassi, 2015), bank regulations (Karolyi and Taboada, 2015), disclosure requirements regarding financial and ownership information (Bonetti, Duro, and Ormazabal, 2020), and national regulations combating climate change (Li, Tang, and Xie, 2023). Our findings suggest that the pressure to improve ESG performance due to mandatory ESG disclosure requirements shapes corporate acquisition decisions, consistent with the growing importance of ESG considerations in M&A transactions.[8]

Third, our paper provides novel insights into the drivers of corporate divestitures. Existing literature has shown that divestitures can be motivated by firms' desire to boost operational efficiency (Maksimovic and Phillips, 2001) or the need to finance corporate investment (Edmans and Mann, 2019; Aktas, Baros, and Croci, 2022). Recent studies have also linked divestitures to corporate ESG considerations. Duchin, Gao, and Xu (2023) empirically demonstrate that firms divest polluting plants due to greenwashing incentives. Berg, Ma, and Streitz (2023) document that much of the reduction in greenhouse gas emissions from large emitters after the Paris Agreement can be attributed to the sale of pollutive assets. To our best knowledge, our paper is the first to examine the role of disclosure regulations in corporate divestiture decisions. We provide evidence that mandatory ESG disclosure pushes firms to divest assets with weak ESG records. We further show that firms tend to accept discounts in such divestitures.

# 2  Background and Hypothesis

## 2.1  Institutional Background

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[8] https://www.torys.com/Our%20Latest%20Thinking/Publications//2021/01/the-growing-importance-of-esg-in-ma-transactions/

In response to investors' growing interest in sustainable investments and demand for ESG-related information, an increasing number of jurisdictions are considering or implementing mandatory ESG disclosure regulations (Christensen et al., 2021). For example, the Non-Financial Reporting Directive (NFRD 2014/95/EU) in the European Union has required companies with more than 500 employees to provide "non-financial and diversity information" in their management report since 2018.[9] According to the NFRD, large EU-based companies must disclose how their activities affect the environment and society. The NFRD has now been incorporated into the national laws of all EU member states. Indeed, several similar regulations have already been implemented in some EU countries. One example is the New Economic Regulations Act adopted by France in 2001. This law requires listed companies in France to disclose how they deal with their environmental and social responsibilities, making France the first country in Europe to mandate such disclosures. As shown in Table A.2, mandatory ESG disclosure requirements have been adopted not only in European countries but also in other countries worldwide, such as Australia, Canada, China, India, and South Africa. Although the U.S. Securities and Exchange Commission (SEC) does not currently require ESG-related disclosure, the situation may change soon since the SEC has proposed amending the rules.[10]

One intended purpose of mandatory ESG disclosure regulations is to enhance the transparency of firms' ESG activities and thereby induce firms to improve their ESG practices by increasing potential pressure from investors and other stakeholders. Given the societal interest in sustainable development, firms will likely face such pressures and respond by enhancing their ESG performance, especially if they are required to report their ESG practices publicly. In alignment with this perspective, the bolstered transparency resulting from ESG disclosure mandates has displayed a unilateral impact on firm-level ESG incidents. On one hand, Krueger et al. (2023) emphasizes that ESG disclosure mandates do not stem from negative ESG incidents.

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[9] https://www.greenfinanceplatform.org/policies-and-regulations/non-financial-reporting-directive-nfrd-directive-201495eu-and-proposal
[10] https://www.whitecase.com/insight-alert/sec-proposes-amendments-rules-regulate-esg-disclosures-investment-advisers-investment

Conversely, the implementation of mandatory ESG disclosure regulations is associated with a decrease in the frequency of detrimental firm-level ESG incidents (Lu et al., 2022).

## 2.2 Hypothesis Development

Existing literature (e.g., Leuz and Wysocki, 2016) highlights the significant impact that disclosure can have on corporate activities. This influence arises from multiple factors. For instance, disclosure plays a crucial role in mitigating information asymmetry, thereby reducing agency costs through external monitoring (Shroff, Verdi, and Yu, 2014). In addition, disclosure facilitates corporate managers' ability to learn from the reporting practices of peer firms, which can serve as a valuable benchmark (Beatty et al., 2013). The transparency afforded by disclosure also enables investors and stakeholders to make comparisons among peer firms, reinforcing the effects of peer influence. Therefore, disclosure is likely to shape corporate decision-making by altering the tradeoffs between the costs and benefits that firms encounter.

Recent studies on mandatory ESG disclosures document real effects on firms' operations. These include positive outcomes like increased CSR activities (Fiechter et al., 2022), reduced carbon emissions (Downar et al., 2021), fewer negative incidents (Lu et al., 2022), more investment towards long-term innovative projects (Gibbons, 2023), discontinuation of environmentally harmful suppliers (Darendeli et al., 2022), and limitations on environmentally unfriendly borrowers (Wang, 2023). These findings highlight both how increased transparency in ESG information can influence firms' daily business practices and how firms may adapt their operations to comply with mandatory ESG disclosure requirements. It is important to note, however, that mandatory ESG disclosure can also incur regulatory compliance costs and may result in decreased stock prices and profitability. This effect is particularly significant for companies with weak ESG performance, as it negatively impacts shareholder value (Chen, et al., 2018; Grewal, Riedl, and Serafeim, 2019). Consequently, disclosure mandates are expected to enhance firms' incentives to improve their performance on ESG issues that are driven by societal pressures, stakeholder expectations, and peer influences.

Firms have multiple ways to enhance their ESG performance, one of which involves acquiring assets that exhibit strong performance on ESG issues. This approach offers dual benefits. On the one hand, by acquiring assets with favorable ESG attributes, firms can immediately bolster their own ESG profiles, which is advantageous for organizations seeking to disclose their ESG practices and achieve short-term performance improvements. On the other hand, through the integration of these ESG-strong assets into their existing portfolio, acquiring firms have the potential to develop new business strategies that yield enhanced environmental and social impacts, fostering positive long-term synergies. Based on these considerations, we present our first hypothesis:

**H1 (Asset Acquisitions):** *Firms are more (less) likely to acquire green (brown) assets with good (poor) ESG performance after their home country introduces mandatory ESG disclosure regulations.*

Corporate operations often involve assets that generate adverse social outcomes. For instance, a facility emitting pollutants may yield profits for its owner while detrimentally impacting the environment. When compelled to disclose their ESG practices, firms may strategically choose to curtail or entirely discontinue business activities associated with environmentally harmful assets to enhance their ESG reputation. In our second hypothesis, we examine firms' divestment of assets that socially responsible investors or stakeholders may consider problematic. We anticipate that mandatory ESG disclosure regulations incentivize firms to divest assets with poor ESG performance. To formalize our expectation, we propose our second hypothesis:

**H2 (Asset Divestitures):** *Firms are more likely to divest brown assets with poor ESG performance after their home country introduces mandatory ESG disclosure regulations.*

Because of the broad scope of disclosure requirements, mandates for ESG disclosure are anticipated to reshape the decision-making tradeoffs within corporations. The amplified transparency resulting from mandatory ESG disclosure regulations may prompt firms to enhance

their ESG performance, thereby increasing the attractiveness of acquiring assets that exhibit excellent ESG characteristics or divesting assets with poor ESG performance. In this context, we anticipate that firms are willing to pay a higher premium when acquiring assets with favorable ESG performance and accept a discount when divesting assets with subpar ESG performance. Accordingly, we present the following two-part hypothesis:

**H3a (Acquisition Premiums):** *Firms pay a higher premium when acquiring green assets with strong ESG performance after their home country introduces mandatory ESG disclosure regulations.*

**H3b (Divestiture Premiums):** *Firms accept a lower premium when divesting brown assets with poor ESG performance after their home country introduces mandatory ESG disclosure regulations.*

The asset restructuring prompted by mandatory ESG disclosure requirements has the potential to shape firms' ESG performance and firm value, extending beyond short-term effects. Acquisitions made in response to ESG disclosure mandates are anticipated to enhance firms' ESG performance and generate long-term value. Proactive strategies, such as mergers and acquisitions that align with green synergy, are likely to be recognized and rewarded by the capital market. Conversely, divestitures undertaken in response to negative incidents may be perceived as a passive strategy. It is worth noting that firms selling weak ESG assets following the regulations may experience a temporary increase in ESG scores, but this short-term enhancement may not necessarily translate into a higher valuation for divesting firms. Thus, we offer our fourth hypothesis:

**H4 (Firm Value):** *The acquisition of green assets with strong ESG performance is expected to have a positive influence on long-term firm value. Firms benefit more from acquiring strong ESG assets than from divesting weak ESG assets.*

# 3 Data and Sample

## 3.1 Data Sources

Our analysis involves the consolidation of data from diverse sources. Initially, we compile information on compulsory ESG-related disclosure regulations worldwide following Krueger et al. (2023) and Gibbons (2023). We cross-check the inception years of mandatory ESG disclosure requirements using a range of other sources, including the Carrot & Sticks (C&S) project, the Sustainable Stock Exchange (SSE) Initiative, the Global Reporting Initiative (GRI), and the Initiative for Responsible Investment (IRI). We further verify the timing with the information provided by governmental entities, stock exchanges, and media channels. The timing of adoption, as presented in Table A.2, illustrates a substantial divergence in the implementation timelines of mandatory ESG disclosure regulations among different countries.

We also obtain comprehensive data on global mergers and acquisitions from the Security Data Company (SDC) Mergers and Corporate Transactions database. It offers comprehensive transaction characteristics at the level of individual deals. The information includes, among many others, the names, countries, and industries of both the target and acquiring companies. It also contains pricing details such as the dollar value of a transaction and the premium of the transaction value relative to the value of the target company. Moreover, the database identifies transactions involving asset divestitures.

In addition, we rely on the PATSTAT Global database to quantify firms' innovation activities. Administered by the European Patent Office (EPO), this repository encompasses global patent data, both bibliographic and legal. We also employ data from RepRisk to assess the frequency of negative ESG incidents involving our sample firms. This data aggregator diligently searches through over 100,000 public sources daily, covering 23 languages, in order to systematically identify ESG risk incidents associated with specific companies. Notably, the events are analyzed and validated by specialized analysts.

We further collect firms' ESG scores from Refinitiv ASSET4. These comprehensive scores are calculated by evaluating more than six hundred firm-level metrics that encompass a

company's performance, commitment, and effectiveness regarding environmental, social, and corporate governance matters. Moreover, we exploit transcripts for M&A conference calls provided by S&P Global Market Intelligence. This database covers approximately 8,000 publicly traded companies and contains both current and historical transcripts.

## 3.2    Sample Description

We start our sample construction with all firms in Refinitiv Worldscope between the years 2000 and 2020. We focus on this period because the first country/region in our sample implemented ESG mandates in 2001, while the last country/region did so in 2019. Using data from Worldscope, we construct a set of firm-year level control variables, including *Total Assets*, *Leverage*, *ROA*, *Market-to-Book Ratio*, *Tangibility*, *Liquidity*, *Sales Growth*, and *Market Share*. We then aggregate the deal-level M&A data from SDC to the firm-year level and merge it with the financial information from Worldscope. We excluded financial firms (SIC codes between 6000 and 6999) and firms that were not covered by SDC. Finally, we merge the patent data from PATSTAT Global and ESG incidents data from RepRisk with our main sample.[11]

Our baseline sample, after eliminating observations with missing values for control variables, contains 130,164 firm-year observations from 89 countries or regions from 2000 to 2020. The number of observations used for regression analysis may vary among tables and columns due to missing values of different dependent variables. Table 1 presents the descriptive statistics of all variables used in our empirical analysis. Table A.1 provides detailed definitions for these variables.

[Insert Table 1 Here]

We match merger and acquisition (M&A) conference calls to our baseline sample in our tests on ESG-related discussions in conference calls. The data on M&A conference calls contain 8,891 transcripts, which cover both executives' presentations and Q&As. In total, there are

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[11] We merge the datasets primarily based on the International Securities Identification Number (ISIN). Additionally, we perform manual checks to ensure the accuracy of the linked dataset.

31,163 and 140,433 components in executives' presentation sessions and Q&A sessions, respectively. [12]

# 4  Empirical Results

We begin our empirical analysis by examining whether the attention to ESG topics in mergers and acquisitions increases following the implementation of mandatory ESG disclosure requirements. We then explore the impacts of ESG disclosure mandates on corporate M&A activities. Next, we investigate how ESG disclosure mandates affect the divestiture of firms' existing assets. Turning to the pricing effects of mandatory ESG disclosure, we focus on whether the premiums of the acquired (divested) targets change after the acquiring (target) firm is required to disclose its ESG practices. Subsequently, we discuss the potential mechanisms underlying our main findings. Finally, we consider the long-term effects of mandatory ESG disclosure requirements.

## 4.1  Mandatory ESG Disclosure and Mergers and Acquisitions

### 4.1.1 ESG-Related Discussions in Conference Calls

To explore whether ESG disclosure mandates incentivize firms to integrate ESG considerations in their M&A decisions, we directly examine ESG-related discussions in M&A conference calls. Corporate executives may talk more about firms' ESG practices during their presentations when considering ESG factors in M&As. In addition, if analysts pay more attention to ESG-related issues due to ESG disclosure mandates, we expect more ESG-related discussions in Q&A sessions after the implementation of such mandates.

[Insert Table 2 Here]

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[12] A M&A conference call involves a presentation regarding the company's M&A activity, and an opportunity for Q&A. Typically an operator will introduce the call and then hand it off to a representative from the firm. Questions and answers often follow. In this case, the operator will be listed on the first record, called a *component*, and the company's representative will have another component. There could be many components as management and analysts talk back and forth. Each of these components belongs to the same transcript. They are numbered in order and labeled with the speaker's name and type of component (Presenter Speech, Question, Answer, etc.).

We exploit ChatGPT, a capable large language model, to determine whether M&A conference call participants discuss ESG issues. For each component in the M&A call transcripts, we ask ChatGPT whether it covers ESG-related topics.[13] We then aggregate the outcomes to the transcript and firm-year level. We find that both executives' presentations and the Q&A sessions potentially cover ESG-related topics. Table IA.1 in the Internet Appendix presents some examples. For instance, Carlos Tavares, Chairman of Fiat Chrysler Automobiles, says, "*We have the traditional CO2 challenge, which may be even more stringent in the near future*;" he stresses "*Clean mobility is, of course, a must*" in his presentation explaining the company's acquisition of Peugeot S.A. In another example, during a conference call explaining Fortum Corporation's acquisition of Uniper's stakes from Elliott and Knight Vinke, one analyst from BNP Paribas challenges the increase in Fortum Corporation's carbon footprint. As a response, Pekka Ilmari Lundmark, the CEO of Fortum, agrees that "*the carbon footprint is an important consideration*" and claims that the share of coal and lignite in the total generation output of the combined company is expected to decrease over time following the transaction. These examples illustrate the importance of ESG considerations in mergers and acquisitions.

Panel A of Table 2 summarizes the percentage of M&A conference calls that mention ESG-related topics. Before the introduction of ESG disclosure mandates, 4.37% of M&A conference calls mention ESG in the presentation session. This portion increases to 6.19% after the implementation of mandatory ESG disclosure requirements. The difference of 1.82% is statistically different from zero at the 5% significance level. We also find a significant increase (1.33%) in the number of M&A conference calls that mention ESG-related topics in Q&A sessions after ESG disclosure mandates become effective.

Panel B of Table 2 reports the regression results for the effects of ESG disclosure mandates on ESG-related discussions in M&A conference calls. Column (1) shows that there is no significant change in the total number of M&A conference calls after the introduction of

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[13] We posed the following inquiry in ChatGPT: "Check if the speech covers CSR/ESG topics and report the outcome as either Yes or No". Additionally, we set the Temperature to 0 to ensure consistent and formatted outcomes. Temperature is a parameter that controls the "creativity" or randomness of the text generated by ChatGPT. A higher temperature (e.g., 0.7) results in more diverse and creative output, while a lower temperature (e.g., 0.2) makes the output more deterministic and focused. We cross-verify the outcomes manually to ensure the accuracy of identification.

mandatory ESG disclosure regulations. However, Columns (2) and (3) show that the number of M&A conference calls mentioning ESG in the presentation and Q&A sessions increases significantly when firms are required to disclosure their ESG practices. This evidence suggests that both corporate executives and analysts discuss more ESG-related topics after the implementation of ESG disclosure mandates. The results are consistent with our view that mandatory ESG disclosure requirements lead to a heightened emphasis on ESG factors in mergers and acquisitions.

**4.1.2 Baseline Results**

After documenting managers' inclination to incorporate ESG considerations into M&A strategies, we examine the impact of ESG disclosure requirements on companies' asset reallocations. We first examine how firms' acquisition decisions respond to mandatory ESG disclosure requirements. To do so, we estimate the following regression model:

$$Acquisitions_{i,t} = \alpha + \beta Mandatory\ Disclosure_{i,t} + \gamma X_{i,t-1} + \theta_i + \theta_t + \epsilon_{i,t} \qquad (1)$$

where $Acquisitions_{i,t}$ represents measures of corporate mergers and acquisitions activity; $Mandatory\ Disclosure_{i,t}$ is an indicator variable that equals one if the home country of firm $i$ has adopted mandatory ESG disclosure regulations in year $t$, and zero otherwise; $X_{i,t-1}$ is a set of firm-level control variables in year $t-1$; $\theta_i$ and $\theta_t$ denote firm and year fixed effects, respectively. The standard errors are clustered at the country level. The coefficient of our interest is $\beta$, which captures the effects of ESG disclosure mandates on mergers and acquisitions.

Control variables incorporated in the model are as follows. Firm size (*Total Assets*) is defined as the logarithm of a firm's total assets. Financial leverage (*Leverage*) is calculated as the ratio of a firm's total debt to total assets. Return-on-assets (*ROA*) is the ratio of a firm's net income to total assets. Market-to-book ratio (*M/B*) is a firm's market capitalization divided by the difference between the firm's total assets and its total liabilities. Asset tangibility (*Tangibility*) refers to the ratio of a firm's property, plant, and equipment to its total assets. The liquidity of assets (*Liquidity*) is measured by the ratio of total current assets to total current liabilities. Sales

growth (*Sales Growth*) is the annual growth rate of a firm's net sales. Market share (*Market Share*) is a firm's percentage share of markets in a given industry and country.

We expect that the requirements to disclose ESG practices lead firms to acquire more assets that would boost their ESG performance (green assets) and buy fewer assets that would hurt their ESG performance (brown assets). To test this conjecture, we focus on two proxies related to corporate mergers and acquisitions. First, green technology may help firms deal with environmental issues in their business operations and thus enhance their ESG performance. Hence, target firms with more green innovation are good assets for acquirer firms that seek to improve their ESG performance due to the disclosure pressure. Second, negative ESG incidents are detrimental to firms' ESG reputations, and a large number of ESG incidents in a given period can be regarded as a signal of poor ESG practices. Therefore, targets with more negative ESG incidents may adversely affect the ESG performance of the acquirer firm.

Table 3 presents our results. Column (1) reports results from the regression of the number of acquired green patents. The outcome variable is *Log(# Green Patents of Targets)*, calculated as the logarithm of one plus the total number of green patents acquired by a firm from mergers and acquisitions in a given year.[14] We find that the coefficient estimate on the indicator for ESG disclosure mandates is positive and statistically significant at the 5% level. It indicates that firms obtain 20.05% more green patents through mergers and acquisitions after their countries adopt mandatory ESG disclosure regulations. We obtain similar findings when considering the number of acquisitions involving green assets. In Column (3), the outcome variable is *Log(# Green Targets)*, calculated as the logarithm of one plus the total number of acquired targets with green patents. We again find a positive impact of mandatory ESG disclosure requirements. The effect is economically significant, with a 3.01% increase in the number of acquisitions of green assets following the enactment of mandatory disclosure regulations.

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[14] Green patents are identified based on the International Patent Classification (IPC) Green Inventory class symbol. The IPC Green Inventory was developed by the IPC Committee of Experts in order to facilitate searches for patent information relating to so-called Environmentally Sound Technologies (ESTs), as listed by the United Nations Framework Convention on Climate Change (UNFCCC). Besides, the duration of patents can vary depending on the type of patent and the jurisdiction, but it is typically expressed in several years, either starting from the date of the patent application or the date of the patent grant. As most patents last for a maximum of 20 years if kept in force, we assume that a patent expires after reaching its maximum duration of 20 years.

[Insert Table 3 Here]

Columns (2) and (4) estimates the effects of ESG disclosure mandates on the acquisition of brown assets. In particular, the dependent variable in Column (2) is *Log(# ESG Incidents of Targets)*, defined as the logarithm of one plus the total number of negative ESG incidents encountered by target firms in the past three years.[15] The result shows that the estimated coefficient on the mandatory disclosure indicator is significantly negative, indicating when firms are required to disclose ESG performance, the targets they acquire tend to encounter fewer negative ESG incidents. Similarly, we find consistent result in the regression of *Log(# Brown Targets)* (Column (4)), which is computed as one plus the logarithm of the total number of targets experiencing negative ESG incidents in the past three years. Overall, Table 3 shows a significant increase (decrease) in firms' acquisitions of green (brown) assets, consistent with our first hypothesis.[16]

**4.1.3 Robustness Tests**

Cohn, Liu, and Wardlaw (2022) point out that there are limitations with linear estimations based on the logarithm of 1 plus an outcome. To mitigate such concerns on our previous findings, we follow the researchers' suggestion and employ a fixed-effects Poisson model in robustness checks. As shown in Table IA.3 in the Internet Appendix, our conclusion holds with this alternative model specification, which suggests that our findings are not driven by the log1plus method.

We then consider the possibility that our findings might be biased by heterogeneous treatment effects in a generalized difference-in-differences design (e.g., Goodman-Bacon, 2021, De Chaisemartin and d'Haultfoeuille, 2020). The concern arises from the fact that in this research design, post-treatment units are treated as control observations in subsequent events. To address this empirical challenge, we re-estimate our baseline regressions using the Callaway and Sant'Anna (2021) estimator. The results based on this alternative estimation method still support

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[15] Our conclusion does not change materially when we consider alternative time horizons such as five years.

[16] As shown in Table IA.2, we do not find a significant change in either the total number or the total dollar volume of acquisition deals conducted by firms after they are required to disclose ESG practices. The evidence suggests only green innovation becomes more valuable for firms facing mandatory ESG disclosure requirements.

our conclusions (Table IA.4 in the Internet Appendix). The evidence suggests that our main findings do not suffer from severe bias associated with heterogenous treatment effects.

As an alternative way to mitigate the concerns about heterogenous treatment effects, we adopt the estimation method proposed by Sun and Abraham (2021). Figure 1 plots the estimated coefficients from a dynamic effect specification. Subfigure (a) shows that there is a significant surge in acquisitions of green patents following the implementation of ESG disclosure mandates. On the other hand, subfigure (b) reveals a notable decrease in the dispose of brown targets, that is, target firms that have been exposed to negative ESG incidents within three years prior to the acquisition. These results are consistent with our baseline findings. More importantly, both figures reveal that the coefficient estimates on the pre-adoption year dummies are not statistically different from zero. The evidence validates the parallel trend assumption.

[Insert Figure 1 Here]

### 4.1.4 Timing of Adopting ESG Disclosure Mandates

One assumption of our analyses is that mandatory ESG disclosure is exogenous. To verify this assumption, we employ a Weibull hazard model following Acharya, Baghai, and Subramanian (2014) and Wang, Yin and Yu (2021). In our model, the "failure event" corresponds to a country's implementation of mandatory ESG disclosure regulations. Our empirical tests rely on the belief that a country's decision to adopt ESG disclosure requirements is independent of the ongoing acquisition or divestiture activities within that country.

Our dataset contains a total of 89 countries or regions throughout the period between 2000 and 2020. For our current analysis, once a country adopts mandatory ESG disclosure regulations, it is excluded from the sample. The dependent variable is *Mandatory ESG Disclosure Event*, which equals one in the year of mandatory ESG disclosure requirement and zero otherwise. The key independent variables of interest, namely *Log(# Acquisitions)*, *Log($ Acquisitions)*, *Log(# Divestitures)*, and *Log($ Divestitures)*, represent the natural logarithmic transformation of the total number and value of acquisitions and divestitures in a given country, respectively. In addition to these variables, we control for various country-year level factors including *Log*

*(GDP)*, *Log (GDP per capita)*, *GDP Growth*, *Stocks Turnover*, *Stocks Traded / GDP*, *Market Capitalization / GDP*, *Tax Revenue / GDP*, and *Inflation*.[17]

Table IA.5 in the Internet Appendix presents the results from our hazard model estimation. Notably, the coefficients corresponding to *Log(# Acquisitions)*, *Log($ Acquisitions)*, *Log(# Divestitures)*, and *Log($ Divestitures)* exhibit no statistical significance across all specifications, which implies that a country's decision to mandate ESG disclosure is not influenced by the preexisting acquisition or divestiture activities of its domestic companies. This lends support to our assumption that the introduction of mandatory ESG disclosure requirements is likely independent of the M&A and divestiture actions of domestic firms. Besides, the lack of significance in the coefficients for the majority of macro-level variables indicates that the timing of mandatory ESG disclosure is not determined by prior macroeconomic conditions. These findings, derived from the Weibull hazard model, additionally confirm that the timing of mandatory ESG disclosure is largely unanticipated. Therefore, we can utilize them to identify the causal effects on firm asset allocation behaviors.

**4.1.5 Placebo Tests**

To safeguard the credibility of our core findings against the influence of random chance, we follow Gao, Hsu, Li, and Zhang (2020) and execute a placebo test. Specifically, we assign a pseudo passage country for each of the 43 instances of mandatory ESG disclosure events. This country is selected randomly from the entire pool of countries, ensuring that it has not implemented such a law within a span of two years.[18] Subsequently, we reestimate our baseline regressions, presented in Columns (1) and (2) of Table 3, employing these pseudo-event years. In this way, we obtain the coefficient estimate on the *Mandatory Disclosure* indicator from one iteration. The sequence of steps is repeated over a total of 5,000 iterations.

Figure 2 plots a histogram of the coefficient estimates associated with the *Mandatory Disclosure* indicator, derived from these pseudo-events. In subfigure (a), the outcome variable of

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[17] *Log (GDP)* and *Log (GDP per capita)* are in 2015 constant U.S. dollars. Dollar figures for GDP in non-US countries are converted from domestic currencies using 2015 official exchange rates.

[18] For instance, consider Canada which implemented ESG disclosure mandates in 2004. For this mandatory disclosure event, we assign to another country that did not adopt the mandate over 2002–2006 (i.e., a country that adopted the law before 2002, or a country that adopted the law after 2006, or a country that never adopted the law).

the estimations is *Log(# Green Patents of Targets)*. It is observed that the coefficient estimate reflecting the true effect, as demonstrated in Column (1) of Table 3, is remarkably positioned to the right of the coefficient estimates distribution resulting from the placebo test. Specifically, the factual coefficient estimate for Mandatory Disclosure (20.05) stands at approximately 3 standard deviations (7.413) higher than the mean (-2.293) of the distribution. Subfigure (b) displays the distribution of coefficient estimates when the dependent variable is *Log(# ESG Incidents of Targets)*. Notably, the coefficient estimate corresponding to the true effect, as revealed in Column (2) of Table 3, is clearly situated to the left of the distribution of coefficient estimates generated through the placebo test. Overall, these results lend support to the view that the impact of ESG disclosure mandates is the primary driver of our main findings.

[Insert Figure 2 Here]

## 4.1.6 Heterogeneity in Target Countries

We now investigate whether the effects of ESG disclosure mandates on M&As vary across countries. In general, firms located in countries that more successfully achieve Sustainable Development Goals (SDGs) or countries that have higher levels of economic development perform better on ESG issues. Thus, we expect that following the introduction of ESG disclosure mandates, firms acquire more (less) target companies originating from countries with better (worse) SDG performance and from advanced (developing) countries.

To test our conjecture, we focus on cross-border M&As and separate deals from different groups of countries. We then estimate the regression specified in Equation (1), with the logarithm of one plus the number of target firms from alternative groups of countries as the dependent variables. We measure a country's performance in achieving SDGs using the SDG index from the Sustainable Development Report provided by the United Nations' Sustainable Development Solutions Network. We use the International Monetary Fund's (IMF) economy groupings to classify countries into advanced and developing economies.

Our findings are presented in Table 4. Column (1) estimates how ESG disclosure mandates faced by acquiring firms affect the acquisition of target firms from countries with higher SDG

scores than the acquirers' home countries. The positive and statistically significant coefficient on the disclosure indicator suggests that more target firms from higher SDG-score countries are purchased by foreign acquirers following the implementation of mandatory ESG disclosure mandates in acquiring countries. This finding is consistent with our expectation. In addition, Column (2) replaces the dependent variable with the number of acquisitions in which the target firm is from a country that performs worse than the acquirer's home country in achieving SDGs. The coefficient on the disclosure indicator is significantly negative. This result indicates that firms facing mandatory ESG disclosure regulations tend to acquire fewer assets from countries with worse SDG performance than their home countries. The last two columns in Table 4 separate target firms from developing countries from those from advanced countries. The analysis of targets from developing (advanced) countries yields a negative (positive) and statistically significant coefficient on the disclosure indicator. To the extent that firms' ESG performance positively correlates with the economic development of their home country, the results are consistent with our view that firms facing ESG disclosure mandates are motivated to purchase more (fewer) assets with strong (weak) ESG performance. Taken together, our findings in Table 4 provide additional support for our first hypothesis.[19]

[Insert Table 4 Here]

**4.1.7 Heterogeneity in Acquirers**

In addition to heterogeneity in target firms' home countries, we exploit variations at the acquiring-firm level to test our hypothesis that mandatory ESG disclosure regulations increase firms' incentives to acquire well-performing ESG assets. To explore the effects of specific firm characteristics, we introduce an interaction term between one given characteristic and the indicator for mandatory ESG disclosure requirements into Equation (1). The regression model is specified as follows:

$$Acquisitions_{i,t} = \alpha + \beta_1 Mandatory\ Disclosure_{i,t} \times M_{i,t} + \beta_2 Mandatory\ Disclosure_{i,t}$$

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[19] We obtain similar conclusions by examining the dollar volume of M&As (Table IA.6 in the Internet Appendix).

$$+\beta_3 M_{i,t} + \gamma \boldsymbol{X}_{i,t-1} + \theta_i + \theta_t + \epsilon_{i,t} \tag{2}$$

where $M_{i,t}$ represents the acquirer characteristics of our interest, and other variables are defined the same as in Equation (1). The standard errors are clustered at the country level. The coefficient of our interest is that on the interaction term, $\beta_1$.

We first examine variations in country-level factors that may affect the role of mandatory ESG disclosure requirements in M&A transactions. Panel A in Table 5 reports the results. In Columns (1) and (2), we consider the way how ESG information is disclosed to the public. Compared with an integrated section in the annual report, an independent sustainability report is more likely to attract public attention toward ESG performance. Consequently, an independent sustainability report tends to be associated with greater market scrutiny. Faced with external pressures of releasing distinct ESG reports, firms are more likely to be motivated to acquire green assets. To identify the method by which the ESG information is disclosed, we look into the mandated disclosure requisites of each country and region. The variable *Stand-Alone Sustainability Report* is a binary indicator. It equals one when firms are obligated to disclose their ESG practices within a dedicated sustainability report, and zero otherwise. We observe that the coefficients on the interaction term involving *Mandatory Disclosure* and *Stand-Alone Sustainability Report* are positive (negative) and statistically significant when the outcome variable is *Log(# Green Patents of Targets)* (*Log(# ESG Incidents of Targets)*). These results confirm our conjecture that firms exhibit an increased inclination to acquire green assets and a decreased propensity to engage with brown assets when they are required to publish standalone ESG reports.

[Insert Table 5 Here]

We then turn to the stringency of law enforcement in the acquirer country. We posit that our baseline results are more pronounced in countries that have stricter legal enforcement. As an indicator of law enforcement stringency, we adopt the *Rule of Law* index provided by the World Bank. This index captures residents' perceptions of their confidence in and adherence to societal rules, including factors such as contract enforcement, property rights, law enforcement agencies,

judicial systems, as well as the likelihood of crime and violence. As shown in Columns (3) and (4), we find that the coefficients on the interaction between *Mandatory Disclosure* and *Rule of Law* index have the expected sign and attains statistical significance. This intriguing pattern suggests that when a company's home country enforces regulations more rigorously, there is an increased probability for the firm to acquire a larger (smaller) number of assets that (do not) adhere to positive ESG criteria, following the implementation of mandatory ESG disclosure requirements. These results are in line with our expectations and lend further support to our baseline findings.

Continuing our investigation, we will now explore the role of firm-specific characteristics and report the results in Panel B of Table 5. We begin with the level of financial constraints faced by acquiring firms. Although firms are motivated to buy targets demonstrating admirable ESG performance, they may not pursue such acquisitions if they have limited financial resources to execute the transactions. Consistent with this intuition, Column (1) shows that the increase in the number of acquired green patents following the enforcement of mandatory ESG disclosure requirements is smaller among firms with higher financial constraints, which are measured by the SA (size-age) Index (Hadlock and Pierce, 2010).[20]

Lastly, we examine the role of monitoring pressure by exploiting heterogeneity in analyst coverage. Financial analysts are crucial participants in financial markets and act as an intermediary between firms and investors. Analysts may convey information about firms' ESG performance to investors. As a result, firms covered by more analysts tend to face higher pressure to improve their ESG profiles after disclosure mandates are enforced. We therefore expect stronger effects of mandatory ESG disclosure requirements among firms with higher analyst coverage. Our empirical findings support this conjecture. Column (3) reports the result from the regression of the number of acquired green patents. Consistent with our baseline finding, we observe a significantly positive coefficient on the indicator for mandatory ESG disclosure. In addition, the regression yields a positive and significant coefficient on the interaction term

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[20] Our results remain robust if we use the alternative measures of financial constraints such as the Kaplan and Zingales (1997) index.

between the disclosure mandate indicator and analyst coverage, [21] suggesting that greater analyst coverage amplifies the increase in green patents acquired after mandatory ESG disclosure regulations. Consistent with our conjecture, Column (4) shows a significantly negative interaction effect between ESG disclosure mandates and analyst coverage on the number of negative ESG incidents experienced by the acquired targets. Taken together, the evidence suggests that financial analysts help intensify the pro-ESG effect of mandatory ESG disclosure regulations on corporate acquisition decisions.

## 4.2    Mandatory ESG Disclosure and Divestitures

Divestitures refer to the sale of a target firm/asset to an acquiring firm where the parent company loses a majority stake in the target company or the target company disposes of a portion of its assets. Mandatory ESG disclosure requirements may induce firms to divest environmentally or socially undesirable assets. To test this conjecture, we estimate the following regression:

$$Divestitures_{i,t} = \alpha + \beta_1 Mandatory\ Disclosure_{i,t} + \beta_2 Mandatory\ Disclosure_{i,t} \times$$

$$\#\ ESG\ Incidents_{i,t-3 \to t} + \beta_3 \#\ ESG\ Incidents_{i,t-3 \to t} + \gamma X_{i,t-1} + \theta_i + \theta_t + \epsilon_{i,t} \qquad (3)$$

where $Divestitures_{i,t}$ represents measures of the divestiture activity of firm $i$ in year $t$; $\#\ ESG\ Incidents_{i,t-3 \to t}$ is the number of negative ESG incidents experienced by firm $i$ in the three years up to year $t$; and all other variables are the same as in Equation (1). Standard errors are clustered at the country level.

The results are presented in Table 6. In Column (1), corporate divestiture activity is measured by the logarithm of one plus the total number of divestitures conducted by a firm in a given year. The coefficient on mandatory ESG disclosure is positive and significant, suggesting that firms facing ESG disclosure mandates divest more assets or subsidiary firms. The increase

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[21] Following Yu (2008), we use *Residual Coverage*, calculated as the residuals from a regression of raw analyst coverage on a set of factors, including firm size, historical performance, growth patterns, external funding activities, and business volatility (Bhushan 1989; Dechow and Dichev 2002; Kasznik 1999). We note that our results are robust to using the raw analyst coverage, defined as the number of analysts who provide earnings forecasts for a firm in a given year.

holds with the dollar volume of divestitures (Column (2)). More importantly, Column (3) reports a positive and significant coefficient on the interaction term between the mandatory disclosure indicator and the number of target firms' negative ESG incidents over the past three years. The result indicates that firms with more negative ESG events are more likely to sell assets after the implementation of mandatory ESG disclosure requirements. This finding supports our hypothesis that firms are more likely to divest assets with poor ESG performance in response to mandatory ESG disclosure regulations. As shown in Column (4), we obtain similar results if we focus on the dollar value of divestitures instead of the number of divestitures.

[Insert Table 6 Here]

To investigate whether corporate divestitures exhibit any pre-event trends, we estimate the dynamic effects using the method proposed by Sun and Abraham (2021), which is robust to heterogeneous treatment effects. As depicted in Figure 3, we do not observe significant pre-existing trends. Instead, the increases in both the number and dollar value of the divestitures of brown assets become statistically significant only after the implementation of ESG disclosure mandates.

[Insert Figure 3 Here]

## 4.3    Mandatory ESG Disclosure and Deal Premiums

Our results so far have shown that mandatory ESG disclosure requirements lead firms to acquire more green assets and dispose of more brown assets. In addition to volume effects, we also explore the pricing effects, specifically whether premiums of the acquisition and divestiture deals change after mandatory ESG disclosure regulations are introduced. To answer this question, we estimate regressions of deal premiums, where the deal premium is calculated as the premium of the offer price relative to the closing price of the target's stock a few days before the announcement of the acquisition or divestiture. We first consider acquisition premiums and estimate the following deal-level regression model:

$$Acquisition\ Premium_{k,t} = \alpha + \beta_1 Mandatory\ Disclosure_{i,t} +$$

$$\beta_2 Mandatory\ Disclosure_{i,t} \times \#\ Green\ Patents_{j,t} + \beta_3 \#\ Green\ Patents_{j,t} +$$

$$\gamma \boldsymbol{X}_{i,t-1} + \theta_i + \theta_t + \epsilon_{i,t} \tag{4}$$

where $Acquisition\ Premium_{k,t}$ represents the premium of deal $k$ in year $t$ in which firm $i$ pursues an acquisition; $\#\ Green\ Patents_{i,t}$ is the number of green patents held by target firm $j$ in year $t$; the other variables are defined as previously. The standard errors are clustered at the country level.

Columns (1) and (2) in Table 7 present the results. The dependent variable is one-day premiums of acquisition deals. It refers to the percentage difference between the offer price in an acquisition deal and the closing stock price of the target firm, observed one day before the announcement of the deal.[22] Column (1) shows that the coefficient on the mandatory ESG disclosure indicator is statistically indistinguishable from zero. This implies that mandatory ESG disclosure by itself does not impact the premium of M&A transactions in general. Column (2) incorporates the interaction term between the ESG disclosure indicator and the number of green patents obtained by the target firm. We find that the coefficient on the interaction is estimated to be positive and statistically significant at the 5% level. The result suggests that after mandatory ESG disclosure regulations are enacted in the acquirer's home country, the acquiring firm is willing to pay a higher deal premium if the target has more green technologies. To the extent that a higher number of green patents corresponds to better ESG performance, the evidence implies that firms that face mandatory ESG disclosure requirements pay higher premiums to acquire targets that perform well on ESG issues. The evidence supports our hypothesis regarding the effects of mandatory ESG disclosure on acquisition premiums.

[Insert Table 7 Here]

We now turn to the effects of ESG disclosure mandates on the premium of divestiture deals. To this end, we estimate a regression with the following specification:

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[22] Our results are robust to deal premiums calculated based on alternative horizons, such as the one-week and one-month premiums (Table IA.7 in the Internet Appendix).

$$Divestirue\ Premium_{k,t} = \alpha + \beta_1 Mandatory\ Disclosure_{i,t} +$$

$$\beta_2 Mandatory\ Disclosure_{i,t} \times \#\ ESG\ Incidents_{i,t-3\rightarrow t} + \beta_3 \#\ ESG\ Incidents_{i,t-3\rightarrow t}$$

$$+\gamma X_{i,t-1} + \theta_i + \theta_t + \epsilon_{i,t} \tag{5}$$

where $Divestiture\ Premium_{k,t}$ represents the premium of deal $k$ in year $t$ in which firm $i$ divests an asset; $\#\ ESG\ Incidents_{i,t-3\rightarrow t}$ is the number of negative ESG incidents experienced by firm $i$ in the three years up to year $t$; and all other variables are defined as previously. Standard errors are clustered at the country level.

Columns (3) and (4) in Table 7 present results from the regression specified in Equation (5). The divestiture premium is calculated as the percentage difference between the offer price of a divestiture deal and the target firm's closing stock price one day before the deal announcement. Column (3) shows that the coefficient on the disclosure indicator is negative and marginally significant, indicating that firms facing mandatory ESG disclosure requirements tend to accept a lower deal premium when divesting assets. Additionally, the interaction effect between the disclosure indicator and the number of negative ESG incidents experienced by the target is significantly negative (Column (4)). The result suggests that following the implementation of ESG disclosure mandates, firms are willing to sell assets at higher discounts if they have recently experienced more negative ESG incidents. This finding supports our third hypothesis and is consistent with the idea that mandatory ESG disclosure regulations push firms to divest assets with poor ESG performance.

## 4.4 Mechanisms

Up to this point, our investigation has established that firms, confronted with mandatory ESG disclosure requirements, undertake a strategic alignment of their balance sheets by acquiring environmentally sound assets while divesting environmentally unfavorable assets. However, this transition in real assets is not without its tangible costs, as firms are compelled to offer higher premiums for acquiring green targets and accept discounts for divesting brown

assets. In light of this, a pertinent question arises: what incentives prompt firms to undertake such a transformative shift?

To address this question, we put forth two alternative channels of explanation: the internal cost of capital and external monitoring. The outcomes of our analysis are presented in Table 8. Columns (1) and (2) pertain to the acquisitions sample, encompassing firms that engage in acquisitions within three years following the implementation of mandatory ESG disclosure regulations in their respective home countries. Conversely, Columns (3) and (4) focus on the divestiture sample, involving firms that undertake divestitures within three years subsequent to the adoption of mandatory ESG disclosure regulations in their home countries.

[Insert Table 8 Here]

Firstly, the existing literature has demonstrated that heightened ESG disclosure and performance tend to lower a firm's cost of capital, thereby positively influencing its valuation and alleviating financial burdens (Hermalin and Weisbach, 2012). A firm's cost of capital encompasses two pivotal components: the cost of equity and the cost of debt. To mitigate the potential endogenous impact of mandatory disclosure and M&A announcements on stock prices, we employ the cost of debt—a more objective metric reflecting the perspective of creditors on the acquirer company's strategic realignment—as a proxy for the acquirer's financing expenses. We conduct a direct examination of the variations in the cost of debt for acquiring firms before and after the implementation of mandatory ESG disclosure. Our findings reveal a noteworthy reduction in the cost of debt following the introduction of ESG disclosure mandates—1.219% for the acquisition sample (Column (1)) and 1.046% for the divestiture sample (Column (3)). This reduction stands out when compared to the average cost of debt of 7.57%, signifying a significant decrease in financing expenses (21.2% for acquisitions and 18.2% for divestitures). This discovery corroborates our previous notion that firms reap the advantage of reduced financing expenses, even in the face of transaction costs associated with mergers and acquisitions as well as divestitures.

Secondly, the enhancement of ESG performance through acquisitions and divestitures can potentially attract institutional ownership, rendering the company more alluring to the capital market (Gibbons, 2023). As elucidated in Table 8, Column (2), the introduction of mandatory ESG disclosures generally prompts a notable increase of 2.779% in institutional ownership within the acquisition sample. This signifies that investor positively recognize and reward firms for their acquisition of environmentally friendly assets. However, the coefficient depicted in Table 8, Column (4), lacks statistical significance. This suggests that institutional investors might possess the capability to differentiate between firms that genuinely pursue improved ESG performance and those engaging in opportunistic "greenwashing" behavior by divesting brown assets.

Collectively, our findings underscore that the strategic approach of acquiring green assets confers greater benefits upon firms compared to the disposal of brown assets.

## 4.5 ESG Performance and Firm Value

We have shown that firms make adjustments in real asset markets in response to mandatory ESG disclosure requirements. One question that follows is whether these adjustments impact firms' ESG performance and firm value. We expect that the acquisition of green assets represents a firm's proactive actions to integrate ESG considerations into its strategy. This tendency would consequently lead to a longer-lasting influence on the company's ESG performance and its overall value, as opposed to the disposal of brown assets, which can be regarded as a more immediate response to unfavorable incidents. In this subsection, we test our conjecture by estimating the following dynamic effect models:

$$Y_{i,t} = \alpha + \sum_{m=0}^{4} \beta_m Mandatory\ Disclosure_{i,t}^m + \beta_5 Mandatory\ Disclosure_{i,t}^{5+}$$

$$+\gamma X_{i,t-1} + \theta_i + \theta_t + \epsilon_{i,t} \tag{6}$$

where $Y_{i,t}$ represents measures of corporate ESG performance and firm value; $m$ denotes the year relative to the adoption year of mandatory ESG disclosure regulations;

*Mandatory Disclosure*$_{i,t}^{m}$, with $m$ from 0 to 4, are indicator variables that equal one in the $m$-th year after (for positive values) the home country of firm $i$ adopts mandatory ESG disclosure requirements and zero otherwise; *Mandatory Disclosure*$_{i,t}^{5+}$ equals one for years starting from the fifth year after the adoption of ESG disclosure mandates in firm $i$'s country and zero otherwise; and all other variables are defined as previously. This specification allows us to distinguish short-term effects from long-term effects. Standard errors are clustered at the country level.

Table 9 presents the results. The sample in Columns (1) and (2) includes firms that make acquisitions within three years after their home country adopts mandatory ESG disclosure regulations. Column (1) uses a firm's ESG score as the outcome variable. The coefficient estimates indicate that there is a significant improvement in acquiring firms' ESG performance following the second year after the adoption of ESG disclosure mandates, confirming the pro-ESG effect of ESG disclosure mandates through mergers and acquisitions.

[Insert Table 9 Here]

In Column (2), we explore whether these acquisitions affect firm value. We measure firm value with Tobin's Q, calculated as the sum of market capitalization and the book value of total liabilities divided by the sum of book value of equity and total liabilities. We find that the coefficients on post-event dummies are all positive and statistically significant after the adoption year, suggesting that firms benefit from disclosure regulations in the long term.

Columns (3) and (4) show the results for firms that divest assets within three years after the enactment of mandatory ESG disclosure regulations. Column (3) shows that although there is an increase in firms' ESG scores several years after the adoption of these regulations, the improvement disappears after five years following the disclosure mandates. This result suggests that the divestment of weak ESG assets does not help improve firms' ESG performance in the long run. Consistent with the temporary improvement in ESG performance, we do not find a significant post-event increase in the value of divesting firms (Column (4)).

Taken together, our findings indicate that acquisitions made in response to ESG disclosure mandates have a positive impact on firms' ESG performance and can potentially create value for the firm in the long run. However, when firms divest poor-ESG assets following the regulations, they only experience a temporary improvement in ESG performance, which does not lead to a higher valuation for the firm. These results suggest that, after mandatory ESG disclosure requirements, firms benefit more from acquiring assets with strong ESG performance rather than divesting assets with weak ESG performance. Our findings shed light on firms' prescriptive actions towards ESG following ESG disclosure mandates.

# 5 Conclusion

This paper investigates corporations' real-asset responses to mandatory ESG disclosure regulations. Our analysis provides empirical evidence that sheds light on how ESG considerations, prompted by the introduction of mandatory ESG reporting, influence acquisitions and divestitures. In line with a heightened focus on ESG factors in such transactions, we document a notable increase in ESG-related discussions during M&A conference calls. The increase is evident both in executives' presentations and in analysts' questions.

We further demonstrate that the introduction of ESG disclosure mandates has a significant impact on firms' acquisition and divestment decisions. Specifically, these mandates stimulate a higher number of acquisitions involving firms with commendable ESG performances, such as firms with green patents, firms from developed countries, and firms residing in countries that excel in achieving SDGs. By contrast, firms become more reluctant to acquire entities with a history of negative ESG incidents. These effects are particularly pronounced among acquirers required to disclose ESG in an independent report, acquirers from countries with stricter legal enforcement, and acquirers with greater analyst coverage. However, the ability of acquirers to purchase green assets is limited by severe financial constraints. In addition to changes in mergers and acquisitions, ESG disclosure mandates lead to more active divestment of assets with inadequate ESG profiles. This indicates that firms are taking proactive steps to align their

portfolios with improved ESG standards and divest assets performing poorly in ESG areas. These results are robust to alternative estimation methods and are not driven by chance. Furthermore, we find strong evidence that the reduced financing costs and the increased shareholder pressure help explain the effects of ESG disclosure mandates on acquisitions and divestitures.

Consistent with the goal of enhancing ESG performance, we find that firms are willing to pay higher premiums when acquiring assets with favorable ESG attributes and to accept discounts when divesting assets with poor ESG performance following ESG disclosure mandates. Moreover, these strategic responses in the real asset market are associated with notable improvements in firms' sustainable ESG performance. Such reactions also have significant valuation effects. Although the effects of divestitures tend to be temporary, M&As induced by ESG disclosure mandates could enhance firm value over the long term.

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**Figure 1 Dynamic Effects of Mandatory ESG Disclosure on Mergers and Acquisitions**

This figure displays the dynamic shifts in coefficients concerning the impact of mandatory ESG disclosure on the acquisition of both green and brown assets. Year to disclosure refers to the time difference between the current year and the year of adopting ESG disclosure mandates. Year 0 represents the year in which the mandatory ESG disclosure regulations are introduced. Subfigures (a) and (b) illustrate the effects on the acquisition of green and brown assets, respectively.
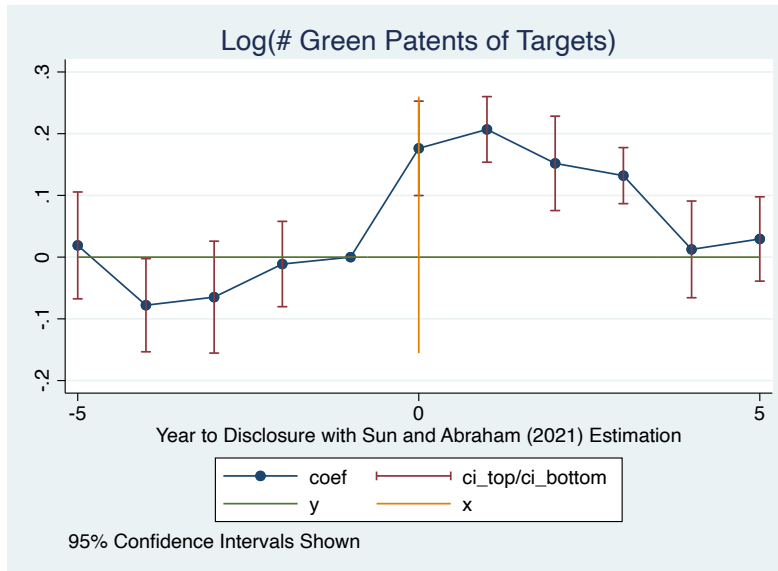


(a) Mandatory ESG Disclosure and Acquisitions of Green Assets
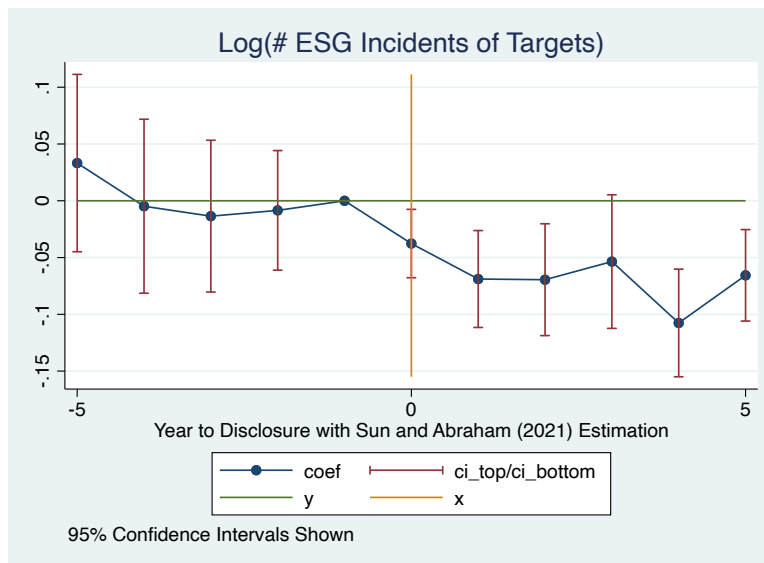


(b) Mandatory ESG Disclosure and Acquisitions of Brown Assets

**Figure 2 Placebo Tests**

This figure plots the histograms of the coefficient estimates on the indicator *Mandatory Disclosure*, obtained from 5,000 bootstrapped simulations of our baseline model employed in Table 3. We first randomly assign a pseudo country for each of the mandatory ESG disclosure regulations implemented during our sample period. The country is chosen from countries in our sample that do not adopt ESG disclosure mandates in a span of two years. Given the pseudo adopting country, we exclude firms that do not conduct acquisitions or divestitures within two years after the assigned mandatory ESG disclosure events. Subfigures (a) and (b) display the histogram of the coefficient estimates from regressions of *Log(# Green Patents of Targets)* and *Log(# ESG Incidents of Targets)*, respectively.
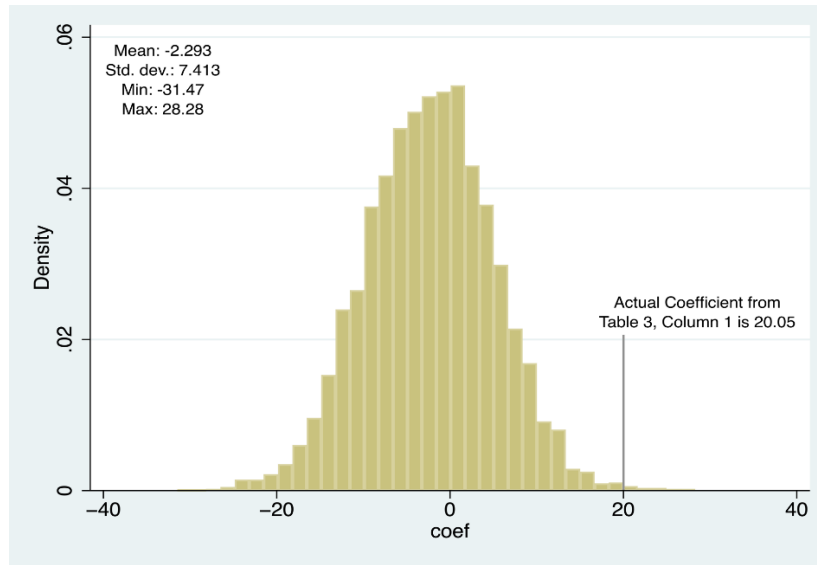


(a)  Histogram of the coefficient estimates from regressions of Log(# Green Patents of Targets)
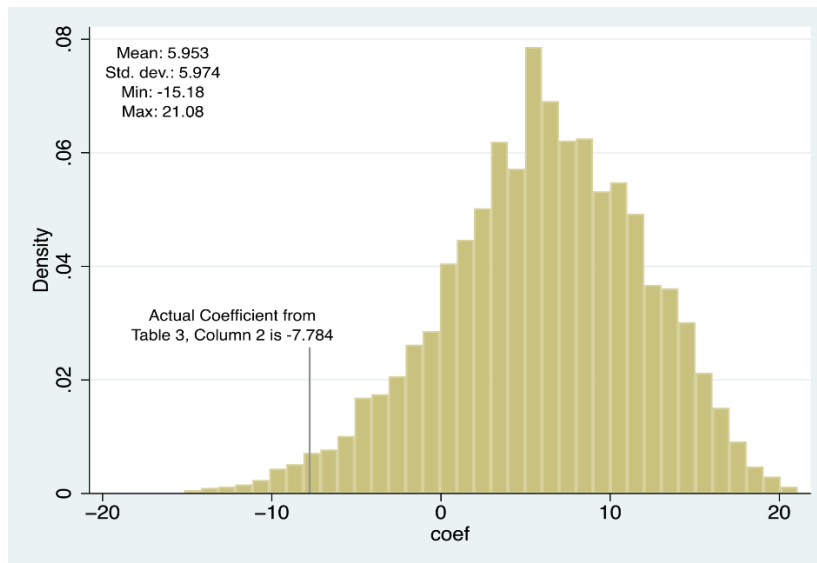


(b)  Histogram of the coefficient estimates from regressions of Log(# ESG Incidents of Targets)

**Figure 3 Dynamic Effects of Mandatory ESG Disclosure on Divestitures**

This figure illustrates the dynamic fluctuations in the coefficients representing the impact of mandatory disclosure on divestitures over the course of successive years leading up to the disclosure. Year to disclosure refers to the time difference between the current year and the year of adopting ESG disclosure mandates. Year 0 represents the year in which the mandatory ESG disclosure regulations are introduced. Subfigures (a) and (b) illustrate the effects on the number and dollar volume of divestitures, respectively.
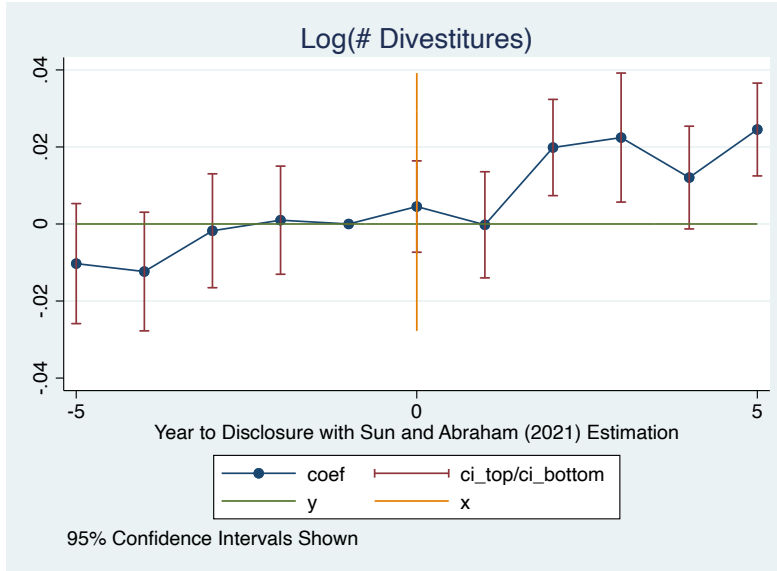


(a)  Mandatory ESG Disclosure and Number of Divestitures
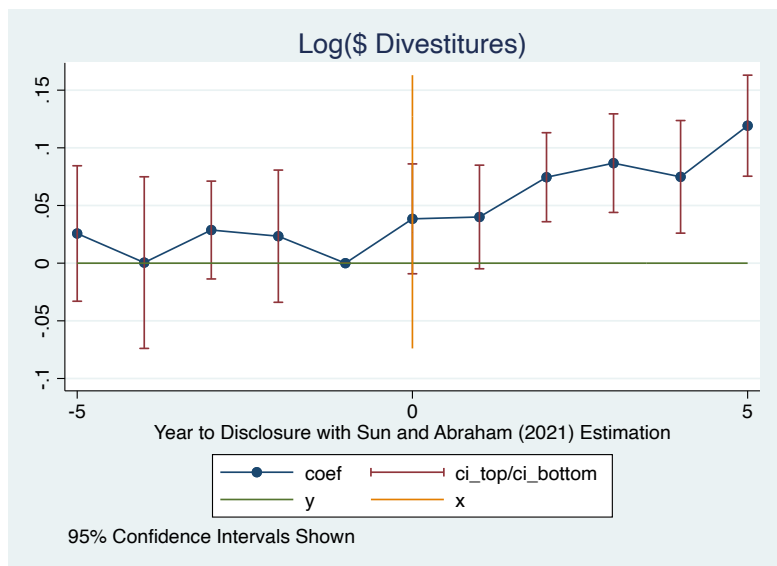


(b)  Mandatory ESG Disclosure and Dollar Value of Divestitures

# Table 1 Descriptive Statistics

This table presents the descriptive statistics of the main variables in this paper. Mandatory Disclosure is an indicator variable that takes one if the home country of a firm has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. Other variables are defined in Table A.1 in the Appendix.

| | Obs | Mean | Std Dev | 5% | Median | 95% |
|---|---|---|---|---|---|---|
| **Dependent Variables** | | | | | | |
| Acquisition Premium | 10,564 | 23.0 | 42.7 | -27.0 | 15.4 | 95.1 |
| Cost of Debt | 47,805 | 7.57 | 16.7 | 0.92 | 4.84 | 16.9 |
| Divestiture Premium | 25,128 | 13.7 | 45.5 | -43.4 | 4.8 | 86.1 |
| ESG Score | 12,689 | 0.65 | 0.29 | 0.09 | 0.76 | 0.95 |
| Institutional Ownership | 35,900 | 11.9 | 14.5 | 0.01 | 6.92 | 40.5 |
| Log(# Acquisitions) | 130,164 | 0.09 | 0.26 | 0 | 0 | 0.69 |
| Log(# Brown Targets) | 14,638 | 0.06 | 0.21 | 0 | 0 | 0.69 |
| Log(# Divestures) | 96,600 | 0.21 | 0.43 | 0 | 0 | 1.10 |
| Log(# Green Targets) | 13,622 | 0.12 | 0.28 | 0 | 0 | 0.69 |
| Log(# M&A Conference Calls) | 13,961 | 0.15 | 0.31 | 0 | 0 | 0.69 |
| Log(# M&A Conference Calls Mentioned ESG by Analysts) | 13,961 | 0.01 | 0.07 | 0 | 0 | 0 |
| Log(# M&A Conference Calls Mentioned ESG by Executives) | 13,961 | 0.01 | 0.07 | 0 | 0 | 0 |
| Log(# Targets from Advanced Countries) | 50,762 | 0.05 | 0.19 | 0 | 0 | 0.69 |
| Log(# Targets from Developing Countries) | 50,762 | 0.02 | 0.12 | 0 | 0 | 0 |
| Log(# Targets from High-SDG-Score Countries) | 50,762 | 0.02 | 0.14 | 0 | 0 | 0 |
| Log(# Targets from Low-SDG-Score Countries) | 50,762 | 0.03 | 0.17 | 0 | 0 | 0 |
| Log(# Green Patents of Targets) | 14,638 | 0.12 | 0.48 | 0 | 0 | 1.10 |
| Log(# ESG Incidents of Targets) | 13,622 | 0.36 | 1.03 | 0 | 0 | 2.77 |
| Log($ Acquisitions) | 130,164 | 0.43 | 1.50 | 0 | 0 | 4.21 |
| Log($ Divestures) | 96,600 | 0.60 | 1.67 | 0 | 0 | 5.08 |
| Tobin's Q | 52,763 | 1.66 | 1.88 | 0.65 | 1.19 | 3.83 |
| **Independent Variables** | | | | | | |
| # ESG Incidents | 96,600 | 3.73 | 12.4 | 0 | 0 | 19 |
| # Target Green Patents | 10,564 | 6.44 | 41.5 | 0 | 0 | 17 |
| Mandatory Disclosure | 130,164 | 0.41 | 0.49 | 0 | 0 | 1 |
| Residual Coverage | 13,381 | 0.81 | 6.57 | -8.13 | -0.23 | 13.8 |
| Rule of Law Index | 13,860 | 1.23 | 0.69 | -0.41 | 1.52 | 1.85 |
| SA Index | 14,358 | 2.66 | 1.55 | -0.28 | 3.23 | 4.46 |
| Stand-Alone Sustainability Report | 14,638 | 0.46 | 0.50 | 0 | 0 | 1 |
| **Control Variables** | | | | | | |
| Leverage | 130,164 | 24.6 | 20.7 | 0 | 22.4 | 60.3 |
| Liquidity | 130,164 | 2.42 | 3.46 | 0.52 | 1.50 | 6.86 |
| Market Share | 130,164 | 10.2 | 21.1 | 0.01 | 1.16 | 63.3 |
| Market-to-Book | 130,164 | 1.20 | 1.61 | 0.13 | 0.71 | 3.82 |
| ROA | 130,164 | -2.52 | 28.4 | -35.7 | 2.98 | 15.0 |
| Sales Growth | 130,164 | 20.3 | 74.2 | -29.8 | 6.51 | 92.1 |
| Tangibility | 130,164 | 30.3 | 23.9 | 1.57 | 25.0 | 78.1 |
| Total Assets | 130,164 | 20.3 | 2.33 | 16.4 | 20.3 | 23.9 |

## Table 2 Mandatory ESG Disclosure and ESG-Related Discussions in Conference Calls

This table reports the relation between ESG disclosure mandates and ESG-related discussions in merger and acquisition (M&A) conference calls. Panel A presents the percentage of M&A conference calls that mention ESG-related topics before and after the implementation of ESG disclosure mandates. Conference calls mentioning ESG-related topics are identified by ChatGPT. Panel B reports the regression results of the effects of mandatory ESG disclosure requirements on the number of M&A conference calls, M&A conference calls mentioning ESG by executives, and M&A conference calls mentioning ESG by analysts. *Mandatory Disclosure* is an indicator variable that takes one if a firm's home country has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. Control variables include firm size (Total Assets), financial leverage (Leverage), return-on-assets (ROA), market-to-book ratio (Market-to-Book), asset tangibility (Tangibility), liquidity of assets (Liquidity), growth rate of net sales (Sales Growth), and share of product markets (Market Share). Detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

**Panel A: M&A Conference Calls Mentioning ESG Topics**

| | Obs | Mean | Std. err. | Std. dev. | [95% conf. interval] | |
|---|---|---|---|---|---|---|
| % M&A conference calls mentioning ESG topics in the presentation session | | | | | | |
| Before Mandatory ESG Disclosure | 2,010 | 4.37 | 0.45 | 19.99 | 3.50 | 5.24 |
| After Mandatory ESG Disclosure | 824 | 6.19 | 0.82 | 23.63 | 4.57 | 7.81 |
| Diff | | 1.82** | 0.87 | | | |
| % M&A conference calls mentioning ESG topics in the Q&A session | | | | | | |
| Before Mandatory ESG Disclosure | 2,010 | 3.70 | 0.41 | 18.23 | 2.90 | 4.50 |
| After Mandatory ESG Disclosure | 824 | 5.03 | 0.74 | 21.14 | 3.58 | 6.47 |
| Diff | | 1.33* | 0.79 | | | |

**Panel B: Regression Results**

|  | (1)<br>Log(# M&A Conference Calls) | (2)<br>Log(# M&A Conference Calls Mentioned ESG by Executives) | (3)<br>Log(# M&A Conference Calls Mentioned ESG by Analysts) |
|---|---|---|---|
| Mandatory Disclosure | 0.923 | 0.726* | 0.682** |
|  | (0.60) | (0.08) | (0.02) |
| Total Assets | -1.981 | -0.180 | 0.0920 |
|  | (0.24) | (0.56) | (0.77) |
| Leverage | -0.143*** | -0.00664 | -0.00426 |
|  | (0.00) | (0.21) | (0.39) |
| ROA | 0.0928*** | 0.0101*** | 0.00632 |
|  | (0.00) | (0.01) | (0.10) |
| Market-to-Book Ratio | 0.959** | -0.0927 | -0.0681 |
|  | (0.02) | (0.43) | (0.41) |
| Tangibility | 0.0159 | 0.0132 | 0.00922 |
|  | (0.80) | (0.30) | (0.23) |
| Liquidity | 0.193 | -0.0306 | 0.0596 |
|  | (0.64) | (0.10) | (0.30) |
| Sales Growth | -0.00404 | -0.00290* | -0.000539 |
|  | (0.50) | (0.10) | (0.63) |
| Market Share | 0.00510 | 0.000567 | -0.00448 |
|  | (0.97) | (0.97) | (0.80) |
| Constant | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes |
| Observations | 13,961 | 13,961 | 13,961 |
| R-squared | 0.140 | 0.137 | 0.168 |

## Table 3 Mandatory ESG Disclosure and Mergers and Acquisitions

This table reports the effects of mandatory ESG disclosure requirements on corporate acquisitions of assets with good ESG performance. Column (1) and (2) presents the regression of the logarithm of one plus the number of green patents acquired by (negative ESG incidents of target firms in the past three years carried to) an acquirer in a given year through mergers and acquisitions. Columns (3) and (4) indicate the regression of the logarithm of one plus the number of acquired target firms that have green patents (experienced negative ESG incidents in the past three years). *Mandatory Disclosure* is an indicator variable that takes one if the home country of a firm has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. Control variables include firm size (Total Assets), financial leverage (Leverage), return-on-assets (ROA), market-to-book ratio (Market-to-Book), asset tangibility (Tangibility), liquidity of assets (Liquidity), growth rate of net sales (Sales Growth), and share of product markets (Market Share). Detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) Log(# Green Patents of Targets) | (2) Log(# ESG Incidents of Targets) | (3) Log(# Green Targets) | (4) Log(# Brown Targets) |
|---|---|---|---|---|
| Mandatory Disclosure | 20.05** | -7.784*** | 3.005** | -2.720* |
| | (0.02) | (0.01) | (0.02) | (0.05) |
| Total Assets | -0.567 | -0.564 | -0.0218 | 0.366 |
| | (0.81) | (0.71) | (0.95) | (0.56) |
| Leverage | -0.331** | 0.00966 | -0.0988*** | 0.0166 |
| | (0.02) | (0.85) | (0.01) | (0.49) |
| ROA | 0.154* | 0.0179 | 0.0140 | 0.0122 |
| | (0.06) | (0.65) | (0.22) | (0.47) |
| Market-to-Book Ratio | -0.920 | 0.901*** | -0.0424 | 0.547*** |
| | (0.17) | (0.00) | (0.87) | (0.00) |
| Tangibility | 0.00155 | -0.0231 | 0.0114 | -0.0574* |
| | (0.98) | (0.81) | (0.53) | (0.07) |
| Liquidity | -0.453 | 0.310 | -0.0172 | 0.107 |
| | (0.33) | (0.15) | (0.91) | (0.19) |
| Sales Growth | 0.0132 | -0.00527 | 0.00333 | -0.00253 |
| | (0.39) | (0.41) | (0.37) | (0.39) |
| Market Share | -0.0972 | -0.00252 | -0.0304 | -0.00650 |
| | (0.51) | (0.98) | (0.29) | (0.84) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes |
| Observations | 13,622 | 14,638 | 13,622 | 14,638 |
| R-squared | 0.551 | 0.520 | 0.609 | 0.541 |

**Table 4 Mandatory ESG Disclosure and M&As: Cross-country Variations of Targets**

This table reports how mandatory ESG disclosure requirements affect mergers and acquisitions by exploiting variations in ESG profiles across countries. Columns (1) and (2) present regressions of the logarithm of one plus the number of acquired target firms from countries with higher and lower sustainable development goal (SDG) scores than the acquirer's home country, respectively. Columns (3) and (4) show regressions of the logarithm of one plus the number of acquired target firms from developed and developing countries, respectively. Only cross-border mergers and acquisitions are included in the analysis. Other variables are defined as previously; detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. $p$-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) |
| --- | --- | --- | --- | --- |
| | Log(# Targets from High-SDG-Score Countries) | Log(# Targets from Low-SDG-Score Countries) | Log(# Targets from Advanced Countries) | Log(# Targets from Developing Countries) |
| Mandatory Disclosure | 0.906** | -1.036** | 1.484* | -0.620** |
| | (0.05) | (0.04) | (0.08) | (0.03) |
| Total Assets | 0.724*** | 0.909*** | 1.545*** | 0.251 |
| | (0.00) | (0.00) | (0.00) | (0.10) |
| Leverage | -0.0259*** | -0.0387*** | -0.0572*** | -0.0237*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| ROA | 0.0113** | -0.000739 | 0.0139** | -0.00182 |
| | (0.02) | (0.86) | (0.02) | (0.42) |
| Market-to-Book Ratio | 0.265*** | 0.442*** | 0.706*** | 0.0188 |
| | (0.00) | (0.01) | (0.00) | (0.71) |
| Tangibility | -0.00842 | -0.0143 | -0.0129 | -0.00238 |
| | (0.31) | (0.23) | (0.23) | (0.74) |
| Liquidity | 0.0661 | 0.0486 | 0.140** | -0.0134 |
| | (0.12) | (0.12) | (0.01) | (0.42) |
| Sales Growth | 0.00298*** | 8.55e-06 | 0.00362*** | -0.000358 |
| | (0.01) | (0.99) | (0.00) | (0.66) |
| Market Share | -0.00610 | 0.0156 | -0.00273 | 0.0168 |
| | (0.64) | (0.32) | (0.89) | (0.15) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes |
| Observations | 50,762 | 50,762 | 50,762 | 50,762 |
| R-squared | 0.121 | 0.155 | 0.124 | 0.126 |

## Table 5 Mandatory ESG Disclosure and M&As: Heterogeneity in Acquirers

This table reports the heterogeneous effects of mandatory ESG disclosure requirements on mergers and acquisitions in different groups of firms. *Stand-Alone Sustainability Report* is a dummy variable equals to one if firms are obligated to disclose their ESG practices in a separate sustainability report, and zero otherwise. *Rule of Law Index* captures perceptions of the extent to which agents have confidence in and abide by the rules of society. A higher value of the index indicates stricter law enforcement. *SA Index* is the size-age index, with a higher value indicating a higher level of financial constraint. *Residual Coverage* quantifies analyst coverage. Other variables are defined as previously; detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

**Panel A: Country-level Heterogeneity**

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | **Disclosure Venue** | | **Law Enforcement** | |
| | Log(# Green Patents of Targets) | Log(# ESG Incidents of Targets) | Log(# Green Patents of Targets) | Log(# ESG Incidents of Targets) |
| Mandatory Disclosure * Stand-Alone Sustainability Report | 96.80* | -30.12** | | |
| | (0.09) | (0.04) | | |
| Mandatory Disclosure * Rule of Law Index | | | -0.607 | -5.800* |
| | | | (0.91) | (0.09) |
| Mandatory Disclosure | -35.09 | 9.322 | 18.46** | -3.445 |
| | (0.39) | (0.28) | (0.05) | (0.55) |
| Rule of Law Index | | | 21.48 | -12.50 |
| | | | (0.16) | (0.18) |
| Total Assets | -0.522 | -0.720 | 0.441 | -0.900 |
| | (0.84) | (0.62) | (0.82) | (0.56) |
| Leverage | -0.367*** | 0.0121 | -0.331** | 0.00156 |
| | (0.01) | (0.80) | (0.02) | (0.97) |
| ROA | 0.179** | 0.0121 | 0.157* | 0.0283 |
| | (0.03) | (0.76) | (0.07) | (0.47) |
| Market-to-Book Ratio | -0.742 | 0.837*** | -0.933 | 0.816*** |
| | (0.41) | (0.00) | (0.29) | (0.00) |
| Tangibility | -0.0341 | -0.0102 | -0.0763 | -0.0154 |
| | (0.73) | (0.92) | (0.42) | (0.88) |
| Liquidity | -0.122 | 0.216 | -0.576 | 0.224 |
| | (0.82) | (0.28) | (0.29) | (0.30) |
| Sales Growth | 0.0197 | -0.00701 | 0.00929 | -0.00562 |
| | (0.21) | (0.28) | (0.50) | (0.39) |
| Market Share | -0.126 | 0.00745 | -0.129 | 0.0129 |
| | (0.37) | (0.93) | (0.41) | (0.89) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes |
| Observations | 13,622 | 14,638 | 12,860 | 13,860 |
| R-squared | 0.566 | 0.527 | 0.564 | 0.550 |

**Panel B: Firm-level Heterogeneity**

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | **Financial Constraints** | | **Analyst Coverage** | |
| | Log(# Green Patents of Targets) | Log(# ESG Incidents of Targets) | Log(# Green Patents of Targets) | Log(# ESG Incidents of Targets) |
| Mandatory Disclosure * SA Index | -16.95** | 3.869*** | | |
| | (0.05) | (0.00) | | |
| Mandatory Disclosure * Residual Coverage | | | 1.258** | -0.571** |
| | | | (0.03) | (0.04) |
| Mandatory Disclosure | 54.19** | -20.51*** | 22.69*** | -8.590** |
| | (0.04) | (0.00) | (0.00) | (0.01) |
| SA Index | 14.92** | -11.11*** | | |
| | (0.04) | (0.00) | | |
| Residual Coverage | | | -0.367 | -0.132 |
| | | | (0.57) | (0.47) |
| Total Assets | 0.101 | 4.702** | -0.883 | -0.353 |
| | (0.97) | (0.02) | (0.66) | (0.81) |
| Leverage | -0.416*** | 0.0456 | -0.361** | -0.0108 |
| | (0.01) | (0.49) | (0.01) | (0.82) |
| ROA | 0.139** | 0.0202 | 0.167 | 0.0252 |
| | (0.05) | (0.62) | (0.14) | (0.58) |
| Market-to-Book Ratio | -1.009 | 1.736*** | -1.393*** | 0.806*** |
| | (0.33) | (0.00) | (0.00) | (0.00) |
| Tangibility | 0.142 | -0.0245 | -0.0431 | -0.0261 |
| | (0.15) | (0.77) | (0.63) | (0.82) |
| Liquidity | -0.463 | 0.341 | -0.601 | 0.257 |
| | (0.42) | (0.12) | (0.22) | (0.32) |
| Sales Growth | -0.00125 | -0.00418 | 0.00699 | -0.00685 |
| | (0.90) | (0.49) | (0.62) | (0.32) |
| Market Share | 0.158 | -0.0533 | -0.0146 | 0.0419 |
| | (0.36) | (0.49) | (0.91) | (0.65) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes |
| Observations | 13,342 | 14,358 | 12,390 | 13,381 |
| R-squared | 0.599 | 0.537 | 0.560 | 0.539 |

## Table 6 Mandatory ESG Disclosure and Divestitures

This table reports the effects of mandatory ESG disclosure requirements on the divestiture of assets with good ESG performance. Columns (1) and (2) present the regression of the logarithm of one plus the number of divestitures executed by a firm in a given year. Columns (3) and (4) show the regression of the logarithm of one plus the total dollar value of divestitures executed by a firm in a given year. *Mandatory Disclosure* is an indicator variable that takes one if a firm's home country has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. *# ESG Incidents* is the number of negative ESG events experienced by the target firm over the three years before the divestiture. Detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) Log(# Divestitures) | (2) Log($ Divestitures) | (3) Log(# Divestitures) | (4) Log($ Divestitures) |
|---|---|---|---|---|
| Mandatory Disclosure | 2.326** | 6.637* | 1.643 | 4.284 |
| | (0.05) | (0.07) | (0.11) | (0.21) |
| Mandatory Disclosure * # ESG Incidents | | | 0.129** | 0.485** |
| | | | (0.04) | (0.04) |
| # ESG Incidents | | | -0.0804*** | -0.141 |
| | | | (0.00) | (0.21) |
| Total Assets | 5.692*** | 23.35*** | 5.692*** | 23.39*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Leverage | 0.0857*** | 0.331*** | 0.0866*** | 0.333*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| ROA | -0.0698*** | -0.220*** | -0.0696*** | -0.219*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Market-to-Book Ratio | -0.328 | -0.193 | -0.318 | -0.130 |
| | (0.11) | (0.76) | (0.12) | (0.84) |
| Tangibility | -0.0563*** | -0.172*** | -0.0558*** | -0.171*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Liquidity | -0.234*** | -0.640** | -0.231*** | -0.640** |
| | (0.00) | (0.03) | (0.00) | (0.02) |
| Sales Growth | -0.00802*** | -0.0282*** | -0.00801*** | -0.0281*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Market Share | 0.0923** | 0.276** | 0.0928** | 0.269** |
| | (0.02) | (0.04) | (0.02) | (0.05) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Economy Level | Yes | Yes | Yes | Yes |
| Observations | 96,600 | 96,600 | 96,600 | 96,600 |
| R-squared | 0.393 | 0.284 | 0.393 | 0.284 |

## Table 7 Mandatory ESG Disclosure and Deal Premiums

This table reports the effects of mandatory ESG disclosure requirements on premiums of acquisition deals and divestiture deals. Columns (1) and (2) use the one-day acquisition premium as the dependent variable. Columns (3) and (4) use the one-day divestiture premium as the dependent variable. The one-day acquisition (divestiture) premium is the percentage difference between the offer price of an acquisition (divestiture) deal and the target firm's closing stock price one day prior to the deal announcement. *Mandatory Disclosure* is an indicator variable that takes one if a firm's home country has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. *# Target Green Patents* is the number of green patents granted to the target firm in the year before the acquisition. Control variables include firm size (Total Assets), financial leverage (Leverage), return-on-assets (ROA), market-to-book ratio (Market-to-Book), asset tangibility (Tangibility), liquidity of assets (Liquidity), growth rate of net sales (Sales Growth), and share of product markets (Market Share). Detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. *p*-values based on standard errors clustered at the country level are reported in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Acquisition Premium | | Divestiture Premium | |
| Mandatory Disclosure | 0.861 | 0.415 | -7.176* | -7.096* |
| | (0.81) | (0.91) | (0.06) | (0.07) |
| Mandatory Disclosure * # Target Green Patents | | 0.0423** | | |
| | | (0.04) | | |
| Mandatory Disclosure * # ESG Incidents | | | | -0.124** |
| | | | | (0.05) |
| # Target Green Patents | | -0.0455*** | | |
| | | (0.01) | | |
| # ESG Incidents | | | | -0.0187 |
| | | | | (0.64) |
| Total Assets | 0.0806 | 0.111 | 1.450 | 1.352 |
| | (0.94) | (0.92) | (0.32) | (0.36) |
| Leverage | 0.0211 | 0.0207 | 0.0415 | 0.0409 |
| | (0.70) | (0.71) | (0.54) | (0.55) |
| ROA | 0.0547 | 0.0576 | 0.00527 | 0.00521 |
| | (0.28) | (0.26) | (0.84) | (0.84) |
| Market-to-Book Ratio | -0.158 | -0.177 | -0.483 | -0.495 |
| | (0.72) | (0.69) | (0.29) | (0.28) |
| Tangibility | 0.117* | 0.116* | -0.0174 | -0.0167 |
| | (0.08) | (0.08) | (0.51) | (0.54) |
| Liquidity | 0.102 | 0.103 | 0.267 | 0.270 |
| | (0.79) | (0.79) | (0.14) | (0.14) |
| Sales Growth | 0.00637 | 0.00639 | -0.00143 | -0.00132 |
| | (0.53) | (0.53) | (0.82) | (0.83) |
| Market Share | -0.0473 | -0.0554 | 0.0116 | 0.0201 |
| | (0.63) | (0.56) | (0.88) | (0.80) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Economy Level | Yes | Yes | Yes | Yes |
| Observations | 10,564 | 10,564 | 25,128 | 25,128 |
| R-squared | 0.615 | 0.616 | 0.736 | 0.736 |

### Table 8 Mechanism Tests: Cost of Financing and Institutional Ownership

This table examines the reasons why mandatory ESG disclosure requirements affect firms' acquisition and divestiture decisions. Columns (1) and (2) (Columns (3) and (4)) include the sample of firms that make acquisitions (divestitures) within three years after the adoption of mandatory ESG disclosure regulations. The dependent variable in Columns (1) and (3) is a firm's *Cost of Debt*, which is the interest expense on debt of firm's total debt. The dependent variable in Columns (2) and (4) is a firm's *Institutional Ownership*, which is the percentage of shares held by institutional investors. *Mandatory Disclosure* is an indicator variable that takes one if a firm's home country has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. Control variables are defined as previously; detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | **Post-Mandates Acquisitions Sample** | | **Post-Mandates Divestiture Sample** | |
| | Cost of Debt | Institutional Ownership | Cost of Debt | Institutional Ownership |
| Mandatory Disclosure | -1.219*** | 2.779* | -1.046* | 0.0944 |
| | (0.00) | (0.09) | (0.09) | (0.93) |
| Total Assets | -0.772*** | 0.986 | -1.032*** | 0.424 |
| | (0.00) | (0.13) | (0.00) | (0.52) |
| Leverage | -0.0371** | -0.0457*** | -0.00257 | -0.0300** |
| | (0.04) | (0.00) | (0.84) | (0.03) |
| ROA | -0.0621*** | 0.0299*** | -0.00518 | 0.0202*** |
| | (0.01) | (0.00) | (0.35) | (0.00) |
| Market-to-Book Ratio | -0.0343 | 0.706*** | -0.128 | 0.435*** |
| | (0.82) | (0.00) | (0.31) | (0.00) |
| Tangibility | -0.0117 | 0.00215 | -0.0323** | -0.00109 |
| | (0.32) | (0.87) | (0.03) | (0.88) |
| Liquidity | -0.268*** | -0.0340 | -0.217*** | 0.00602 |
| | (0.00) | (0.30) | (0.01) | (0.91) |
| Sales Growth | 0.000387 | 0.00274*** | -0.00126 | 0.00297*** |
| | (0.87) | (0.00) | (0.32) | (0.01) |
| Market Share | 0.00444 | 0.0654*** | 0.0221* | 0.0637** |
| | (0.71) | (0.00) | (0.09) | (0.02) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Economy Level | Yes | Yes | Yes | Yes |
| Observations | 19,544 | 15,298 | 47,805 | 35,900 |
| R-squared | 0.276 | 0.858 | 0.298 | 0.809 |

**Table 9 Effects on ESG Performance and Firm Value**

This table reports how firms' ESG performance and valuation change after acquisitions or divestitures following ESG disclosure mandates. Columns (1) and (2) include the sample of firms that make acquisitions within three years after the adoption of mandatory ESG disclosure regulations; Columns (3) and (4) include firms that make divestitures within the same timeframe and regulatory landscape. The dependent variable in Columns (1) and (3) is a firm's *ESG Score*. The dependent variable in Columns (2) and (4) is a firm's *Tobin's Q. Mandatory Disclosure$^m$*, with $m$ from 0 to 4, are indicator variables that equal one in the $m$-th year after (for positive values) the home country of a given firm adopts mandatory ESG disclosure requirements and zero otherwise; *Mandatory Disclosure$^{5+}$* equals one for years starting from the fifth year after the adoption of ESG disclosure mandates in the home country of a given firm and zero otherwise; Control variables are defined as previously; detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | **Post-Mandates Acquisitions Sample** | | **Post-Mandates Divestiture Sample** | |
| | ESG Score | Tobin's Q | ESG Score | Tobin's Q |
| Mandatory Disclosure$^0$ | 2.631 | 6.064 | 1.401 | 0.785 |
| | (0.12) | (0.12) | (0.30) | (0.88) |
| Mandatory Disclosure$^1$ | 3.127 | 30.24*** | 3.100** | 19.89 |
| | (0.15) | (0.00) | (0.04) | (0.23) |
| Mandatory Disclosure$^2$ | 4.420* | 12.62 | 3.447* | 10.96 |
| | (0.08) | (0.21) | (0.09) | (0.57) |
| Mandatory Disclosure$^3$ | 5.381** | 17.32** | 3.593* | 9.380 |
| | (0.04) | (0.03) | (0.09) | (0.43) |
| Mandatory Disclosure$^4$ | 4.782* | 19.73* | 4.098* | 11.51 |
| | (0.08) | (0.10) | (0.09) | (0.42) |
| Mandatory Disclosure$^{5+}$ | 4.808* | 22.55* | -0.692 | 17.22 |
| | (0.09) | (0.09) | (0.80) | (0.48) |
| Total Assets | 7.959*** | -31.50*** | 7.259*** | -59.69*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Leverage | -0.0895 | 0.138 | -0.0808* | 0.492*** |
| | (0.16) | (0.19) | (0.05) | (0.00) |
| ROA | -0.0137 | 0.177* | -0.00234 | -0.645*** |
| | (0.60) | (0.09) | (0.86) | (0.00) |
| Market-to-Book Ratio | 1.368*** | | 0.838* | |
| | (0.01) | | (0.07) | |
| Tangibility | 0.0231 | -0.552*** | -0.0107 | -0.449*** |
| | (0.55) | (0.00) | (0.71) | (0.00) |
| Liquidity | -0.201* | -0.347 | -0.151 | 0.118 |
| | (0.08) | (0.67) | (0.22) | (0.81) |
| Sales Growth | -0.0205*** | 0.0492** | -0.0138*** | 0.0571*** |
| | (0.00) | (0.01) | (0.00) | (0.00) |
| Market Share | -0.0986 | 0.343** | -0.0453 | 0.687*** |
| | (0.16) | (0.03) | (0.18) | (0.00) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes |
| Observations | 7,169 | 20,216 | 12,689 | 52,763 |
| R-squared | 0.821 | 0.591 | 0.795 | 0.474 |

# Appendix

## Table A.1 Variable Definition

This table reports the details about the data source and means of constructing the independent variables and control variables used in our paper.

| | Dependent Variables | Source |
|---|---|---|
| **Acquisition Premium** | The percentage difference between the offer price of an acquisition deal and the target firm's closing stock price 1 day prior to the deal announcement. | SDC |
| **Cost of Debt** | Firm-year variable. Worldscope item 08356. The interest expense on debt of firm's total debt (in percentage). Calculated as [Interest Expense on Debt / (Short Term Debt & Current Portion of Long Term Debt + Long Term Debt)] * 100. | Worldscope |
| **Divestiture Premium** | The percentage difference between the offer price of a divestiture deal and the target firm's closing stock price 1 day prior to the deal announcement | SDC |
| **ESG Score** | ESG score measures the company's ESG performance based on verifiable reported data in the public domain. Refinitiv captures and calculates over 450 company-level ESG measures, of which a subset of 186 (details in the ESG glossary, available on request) of the most comparable and material per industry, power the overall company assessment and scoring process.These are grouped into 10 categories that reformulate the three pillar scores and the final ESG score, which is a reflection of the company's ESG performance, commitment and effectiveness based on publicly reported information. | Refinitiv ASSET4 |
| **Institutional Ownership** | Firm-year variable. The percent of shares held by institutional investors (in percentage). Calculated as [SharesHeld / Common Shares Outstanding (Worldscope item 05301)] * 100. SharesHeld represents the number of shares held by institutional investors. Winsorized at level 1% and 99% levels. | Thomson Reuters Ownership |
| **Log(# Acquisitions)** | The logarithm of one plus the number of acquisitions made by a firm in a given year. | SDC |
| **Log(# Brown Targets)** | The logarithm of one plus the total number of target firms that have experienced negative ESG incidents in the past three years. | SDC, RepRisk |
| **Log(# Divestures)** | The logarithm of one plus the number of divestitures executed by a firm in a given year. The deal is a divestiture meaning there is a loss of majority control: the parent company is losing a majority interest in the target or the target company is disposing of assets. | SDC |
| **Log(# Green Targets)** | The logarithm of one plus the total number of target firms that possess at least one green patent. Green patents are identified based on IPC Green Inventory class symbol. | SDC, PATSTAT |
| **Log(# M&A Conference Calls)** | The logarithm of one plus the number of M&A conference calls by a firm in a given year. S&P Global Market Intelligence Transcripts data offers current and historical transcripts covering approximately 8,000 public companies. | S&P Global, ChatGPT |
| **Log(# M&A Conference Calls Mentioned ESG by Analysts)** | The logarithm of one plus the number of M&A conference calls mentioned ESG by analysts in the Q&A sessions (firm-year level). ESG topics are identified by ChatGPT. | S&P Global, ChatGPT |
| **Log(# M&A Conference Calls Mentioned ESG by Executives)** | The logarithm of one plus the number of M&A conference calls mentioned ESG by executives in the presenter speech sessions (firm-year level). ESG topics are identified by ChatGPT. | S&P Global, ChatGPT |

| | | |
|---|---|---|
| **Log(# Targets from Advanced Countries)** | The logarithm of one plus the number of acquired target firms that are located in developed countries based on the classification of economies provided by the International Monetary Fund (IMF). | SDC, IMF |
| **Log(# Targets from Developing Countries)** | The logarithm of one plus the number of acquired target firms that are located in developing countries based on the classification of economies provided by the International Monetary Fund (IMF). | SDC, IMF |
| **Log(# Targets from High-SDG-Score Countries)** | The logarithm of one plus the number of acquired target firms that are located in countries whose Sustainable Development Goals (SDG) index is higher than that in the acquirer country, where the SDG index measures the total progress towards achieving all 17 UN-proposed SDGs. | SDC, SDR |
| **Log(# Targets from Low-SDG-Score Countries)** | The logarithm of one plus the number of acquired target firms that are located in countries whose Sustainable Development Goals (SDG) index is lower than that in the acquirer country, where the SDG index measures the total progress towards achieving all 17 UN-proposed SDGs. | SDC, SDR |
| **Log(# Green Patents of Targets)** | The logarithm of one plus the total number of green patents obtained by a firm in a given year through mergers and acquisitions. Green patents are identified based on IPC Green Inventory class symbol. | SDC, PATSTAT |
| **Log(# ESG Incidents of Targets)** | The logarithm of one plus the total number of negative ESG incidents encountered by target firms in the past three years, which were acquired by a firm in a given year through mergers and acquisitions. | SDC, RepRisk |
| **Log($ Acquisitions)** | The logarithm of one plus the aggregate dollar amount spent on mergers and acquisitions by a firm in a given year. | SDC |
| **Log($ Divestures)** | The logarithm of one plus the total dollar volume of divestitures executed by a firm in a given year. The deal is a divestiture meaning there is a loss of majority control: the parent company is losing a majority interest in the target or the target company is disposing of assets. | SDC |
| **Tobin's Q** | Tobin's Q is calculated as [Market Capitalization (Worldscope item 08001) + Total Liabilities (Worldscope item 03351)] / [Common Equity (Worldscope item 03501) + Total Liabilities (Worldscope item 03351)]. Firm-year level Tobin's Q is winsorized at level 1% and 99% levels. | Worldscope |
| | **Independent Variables** | **Source** |
| **# ESG Incidents** | The total number of negative ESG incidents of the divestiture company firm in the last 3 years. We measure negative ESG events using data on ESG incidents compiled by RepRisk, a company that collects firm-specific ESG news in multiple languages from public media sources. | RepRisk |
| **# Target Green Patents** | It is the number of green patents held by the target. Green patents are identified based on IPC Green Inventory class symbol. | PATSTAT |
| **Mandatory Disclosure** | Dummy variable that equals one for all years starting with the first year after the implementation of mandatory ESG disclosure in a country, and zero otherwise. | Manually Collected |
| **Residual Coverage** | This variable quantifies analyst coverage. We use the number of analysts who made forecasts about firms' earnings in a specific year in the I/B/E/S database, and construct the variable Residual Coverage following Yu (2008) by estimating the residual of the regression that controls for firm size, past performance, growth, external financing activities, and volatility of business (Bhushan 1989; Dechow and Dichev 2002; Kasznik 1999). | I/B/E/S |
| **Rule of Law Index** | Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5. | WorldBank |

| | | |
|---|---|---|
| **SA Index** | Firm-year variable. SA (size-age) Index is based on the Hadlock and Pierce (2010) paper on financing constraints. The index is calculated as (−0.737 * Size) + (0.043 * Size * Size) − (0.040 * Age), where Size equals the log of book assets, and Age is the number of years the firm is listed with a non-missing stock price on Worldscope. In calculating this index, Size is winsorized (i.e., capped) at (the log of) $4.5 billion, and Age is winsorized at thirty-seven years. | Worldscope |
| **Stand-Alone Sustainability Report** | Dummy variable that takes the value of one if firms are obligated to disclose their ESG practices in a separate sustainability report, and zero otherwise. | Manually Collected |
| | **Control Variables** | **Source** |
| **Leverage** | Firm-year variable. Worldscope item 08236. Calculated as the ratio of total debt to total assets. Winsorized at level 1% and 99% levels. | Worldscope |
| **Liquidity** | Liquidity. Firms with more liquid assets can use them as another internal source of funds instead of debt, leading to lower optimal debt equity ratio. Calculated as Total Current Assets (Worldscope item 02201) / Total Current Liabilities (Worldscope item 03101). Total Current Assets represents cash and other assets that are reasonably expected to be realized in cash, sold or consumed within one year or one operating cycle. Total Current Liabilities represent debt or other obligations that the company expects to satisfy within one year. Winsorized at level 1% and 99% levels. | Worldscope |
| **Market Share** | Firm-year variable. Firm's percentage share of sales by all public firms in the same Fama & French 12 industry and the same country. Winsorized at level 1% and 99% levels. | Worldscope |
| **Market-to-Book** | A higher market-to-book tends to be a sign of more attractive future growth options, which a firm tends to protect by limiting its leverage. Calculated as Market Capitalization / (Total Assets - Total Liabilities), where Total Liabilities (Worldscope item 03351) represent all short- and long-term obligations expected to be satisfied by the company. Winsorized at level 1% and 99% levels. | Worldscope |
| **ROA** | Firm-year variable. Calculated as [Net Income (Worldscope item 01651) / Total Assets (Worldscope item 02999)] * 100. Winsorized at level 1% and 99% levels. | Worldscope |
| **Sales Growth** | Firm-year variable. Worldscope item 08631. The growth rate of firm's net sales (in percentage). Calculated as (Current Year's Net Sales or Revenues / Last Year's Total Net Sales or Revenues - 1) * 100. Winsorized at level 1% and 99% levels. | Worldscope |
| **Tangibility** | Firms operating with greater tangible assets have a higher debt capacity. Calculated as Property, Plant And Equipment (Worldscope item 02501) / Total Assets (Worldscope item 02999). Property, Plant And Equipment represents Gross Property, Plant and Equipment less accumulated reserves for depreciation, depletion and amortization. Winsorized at level 1% and 99% levels. | Worldscope |
| **Total Assets** | Natural logarithm of [Raw Total Assets (Worldscope item 07230)]. Raw Total Assets represent the total assets of the company converted to U.S. dollars using the fiscal year-end exchange rate. | Worldscope |

## Table A.2 List of Mandatory ESG Disclosure Regulations Around the World

This table summarizes the 43 regulations that mandates ESG disclosure policies and disclosure venues and their corresponding introduction year in different countries.

| Country/Region | Year | Disclosure Venue | Regulation | Authority |
|---|---|---|---|---|
| **Argentina** | 2008 | ESG Report | Ley N 2594 de balance de responsabilidad social y ambiental | Buenos Aires City Council |
| **Australia** | 2003 | Annual Report | Listing Rule 4.10.3, Australian Stock Exchange | Australian Stock Exchange |
| **Austria** | 2016 | ESG Report | Transposition of EU NFR Directive: Sustainability and Diversity Improvement Act 257/ME | Ministry of Justice |
| **Belgium** | 2009 | Annual Report | The 2009 Belgian Code on Corporate Governance | Corporate Governance Committee |
| **Canada** | 2004 | ESG Report | The TSX Timely Disclosure Policy | Stock Exchange |
| **Chile** | 2015 | Annual Report | Norma de Caracter General N 385/386 | Superintendencia de valores y seguros |
| **China** | 2008 | ESG Report | Guidelines on Listed Companies' Environmental Information Disclosure | Shanghai Stock Exchange (SSE) |
| **Denmark** | 2016 | Both | Transposition of EU NFR Directive: Executive order No. 558 | Governments (Danish Business Authority) |
| **Finland** | 2016 | Annual Report | Transposition of EU NFR Directive: HE 208/2016 Government proposal to Parliament for Amendments to Accounting Act and certain related Acts | Governments (Ministry of Economic Affairs and Employment) |
| **France** | 2001 | Annual Report | New Economic Regulations Act (NRE) | Parliament |
| **Germany** | 2016 | Annual Report | Transposition of EU NFR Directive: CSR Directive Implementation Act | Governments (Ministry of Justice and Consumer Affairs ) |
| **Greece** | 2006 | Annual Report | Law 3487, 2006 | Parliament |
| **Hong Kong** | 2015 | ESG Report | HKEX Listing Rules Disclosure of Financial Information | Hong Kong Stock Exchange |
| **Hungary** | 2016 | Annual Report | Transposition of EU NFR Directive: Amendments to Accounting Act C of 2000 | Governments (Ministry of National Economy, accounting and supervision) |
| **India** | 2015 | ESG Report | Circular No. CIR/CFD/CMD/10/2015 Format for Business Responsibility Report | Securities and Exchange Board of India (SEBI) |
| **Indonesia** | 2012 | Annual Report | Rule No.KEP-431/BL/2012 concerning the obligation to submit annual reports for issuers of public companies | Capital Market and Financial Institutions Supervisory Agency (Bapepam-LK) |
| **Israel** | 2009 | Annual Report | Securities Law Regs | The Israeli Parliament |
| **Ireland** | 2016 | ESG Report | Transposition of EU NFR Directive (1) | Governments (Department of Jobs, Enterprise and Innovation) |
| **Italy** | 2016 | ESG Report | Transposition of EU NFR Directive: legislative Decree 30 December 2016, n.254 | Ministry of Economic Affairs |
| **Japan** | 2005 | ESG Report | Mandatory GHG Accounting System | Ministry of the Environment |
| **Kenya** | 2015 | Annual Report | Capital Markets Act, Code of Corporate Governance Practices | Capital Markets Authority of Kenya |
| **South Korea** | 2012 | Annual Report | Green Posting System | Financial Services Commission |
| **Kuwait** | 2015 | ESG Report | Executive Regs, Book 15, Corporate Governance | Capital Markets Authority |
| **Malaysia** | 2007 | Annual Report | Main Markets listing requirements CSR description | Bursa Malaysia Securities Berhad |
| **Mexico** | 2012 | Annual Report | National Emissions Register (RENE) | The Mexican Congress |

| | | | | |
|---|---|---|---|---|
| **Netherlands** | 2016 | ESG Report | Transposition of EU NFR Directive | Ministry of Security and Justice |
| **Norway** | 2013 | Both | Act amending the Norwegian Accounting Act | Norwegian Parliament |
| **Pakistan** | 2009 | ESG Report | Companies (Corporate Social Responsibility) general order | Securities and exchange commission of Pakistan |
| **Peru** | 2015 | ESG Report | Resolucion SMV No 033-2015-SMV/01 | Peruvian Capital Markets Superintendency |
| **Philippines** | 2011 | Annual Report | Corporate Social Responsibility Act, 2011 | Committee on Trade and Commerce |
| **Poland** | 2016 | Annual Report | Transposition of EU NFR Directive: Amendments to the Accounting Act | Governments |
| **Portugal** | 2010 | Annual Report | The Financial Reporting Accounting Standard n 26 | Commission for Accounting Normalization |
| **Romania** | 2016 | ESG Report | Transposition of EU NFR Directive: Act No 1938 as "Order regarding changes and additions to existing accounting regulations" | Governments (Ministry of Public Finance) |
| **Russia** | 2014 | ESG Report | Reg. No. 454-P on the Disclosure of Information by Issuers of Securities. | Central Bank of the Russian Federation |
| **Singapore** | 2016 | ESG Report | SGX0ST Listing Rules Practice Note 7.6 Amendments to sustainability reporting guide | Singapore Stock Exchange (SGX) |
| **Slovenia** | 2017 | Annual Report | Transposition of EU NFR Directive: Amending the Companies Act | Governments |
| **South Africa** | 2010 | Both | Johannesburg Stock Exchange Listing Requirement 2010 | Johannesburg Stock Exchange (JSE) |
| **Spain** | 2012 | Both | Spanish Sustainable Economy Law (revision of 2011) | The National Securities Market (CNVM) |
| **Sweden** | 2016 | ESG Report | Transposition of EU NFR Directive: Corporate sustainability reporting and diversity policy | Governments (Ministry of Industries and Innovation) |
| **Thailand** | 2014 | Annual Report | Rules, Conditions, and Procedures for Disclosure Regarding Financial and Non-financial Information of Securities Issuers | Securities and Exchange Commission Thailand |
| **Taiwan** | 2019 | ESG Report | Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE Listed Companies | Taiwan Stock Exchange (TWSE) |
| **Turkey** | 2014 | Both | GHG Moniroting Regulation/Communique on corporate governance principles | Capital Markets Board of Turkey |
| **United Kingdom** | 2013 | ESG Report | The companies Act 2006 Regulations 2013 | Secretary of State |

# Internet Appendix

# ESG Considerations in Acquisitions and Divestitures: Corporate Responses to Mandatory ESG Disclosure

*Not for Publication*

**Table IA.1 Examples of M&A Conference Call Transcripts Mentioning ESG**

The following are two examples of M&A conference calls that mentioned ESG issues (highlighted in bold).

EXAMPLE 1:
<u>Carlos Tavares (Chairman of the Managing Board):</u> If we look at those challenges, on the next slide, we can see that not only **we have the traditional CO2 challenge, which may be even more stringent in the near future**, looking at what the authorities are now discussing in terms of green deals all over the world, and specifically in Europe. But beyond the CO2 challenge, which is going to be one of the challenges we'll have to face, we also have the cost of mobility. **Clean mobility is, of course, a must**, but affordable mobility is what our customers will be expecting from us. They will be expecting from us safe, **clean,** and affordable mobility. And this is the dimension in which this new company will have a lot more competitiveness than the 2 companies standing alone.

Source: Conference Call for the Acquisition of Peugeot S.A. by Fiat Chrysler Automobiles N.V., Dec 18, 2019

EXAMPLE 2:
<u>James Sparrow (BNP Paribas Markets 360):</u> … You obviously will **increase your sort of consolidated carbon footprint** at a time when you're trying to transition to cleaner energy. So just curious to think how you view that and also how your majority shareholder views the fact that, effectively, you're becoming - **you're increasing your carbon footprint**.

<u>Pekka Ilmari Lundmark (President, CEO & MD):</u> Okay. Yes, if I take the second part of the question, and then Markus will continue on the credit rating and its implications. **Obviously, the carbon footprint is an important consideration**. We continue to be of the opinion that Europe and the world needs to reduce emissions fast. When you just technically calculate that -- what the combined Fortum's and Uniper's generation -- of the generation volume, what the share of coal and lignite would be of the total output in 2018, coal and lignite of the total generation output of the combined portfolio would have been 18%, 1-8. And then obviously, subject to then the plans that will be confirmed regarding coal phaseout with the national authorities, we will then **expect that share to shrink over time**.

Source: Conference Call for the Acquisition of Uniper by Fortum Corporation, Oct 8, 2019

## Table IA.2 Mandatory ESG Disclosure and General Acquisition Transactions

This table reports the effects of mandatory ESG disclosure requirements on the number and dollar value of mergers and acquisitions conducted by a firm. Columns (1) presents the regression of the logarithm of one plus the number of mergers and acquisitions conducted by a firm in a given year. Columns (2) shows the regression of the logarithm of one plus the total dollar value of mergers and acquisitions conducted by a firm in a given year. *Mandatory Disclosure* is an indicator variable that takes one if a firm's home country has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. Detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

|  | (1)<br>Log(# Acquisitions) | (2)<br>Log($ Acquisitions) |
|---|---|---|
| Mandatory Disclosure | 0.193 | 0.550 |
|  | (0.77) | (0.85) |
| Total Assets | 1.226*** | 5.601*** |
|  | (0.00) | (0.00) |
| Leverage | -0.0602*** | -0.303*** |
|  | (0.00) | (0.00) |
| ROA | 0.0146*** | 0.107*** |
|  | (0.00) | (0.00) |
| Market-to-Book Ratio | 0.809*** | 4.927*** |
|  | (0.00) | (0.00) |
| Tangibility | -0.0342*** | -0.0813** |
|  | (0.00) | (0.04) |
| Liquidity | 0.0905** | 0.403 |
|  | (0.03) | (0.11) |
| Sales Growth | 0.00359*** | 0.0130*** |
|  | (0.00) | (0.01) |
| Market Share | -0.0452** | -0.200** |
|  | (0.02) | (0.03) |
| Constant | Yes | Yes |
| Firm Dummy | Yes | Yes |
| Year Dummy | Yes | Yes |
| Cluster at Economy Level | Yes | Yes |
| Observations | 130,164 | 130,164 |
| R-squared | 0.181 | 0.173 |

## Table IA.3 Mandatory ESG Disclosure and M&As: Poisson Regression

This table presents the effects of mandatory ESG disclosure requirements on corporate acquisitions of green and brown assets estimated from a Poisson regression. Column (1) and (2) presents the regression of the number of green patents acquired by (negative ESG incidents of target firms in the past three years carried to) an acquirer in a given year through mergers and acquisitions. Columns (3) and (4) indicate the regression of the number of acquired target firms that have green patents (experienced negative ESG incidents in the past three years). *Mandatory Disclosure* is an indicator variable that takes one if the home country of a firm has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. Control variables include firm size (Total Assets), financial leverage (Leverage), return-on-assets (ROA), market-to-book ratio (Market-to-Book), asset tangibility (Tangibility), liquidity of assets (Liquidity), growth rate of net sales (Sales Growth), and share of product markets (Market Share). Detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. $p$-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | # Green Patents of Targets | # ESG Incidents of Targets | # Green Targets | # Brown Targets |
| Mandatory Disclosure | 1.775*** | -1.540*** | 0.232*** | -0.411** |
| | (0.00) | (0.00) | (0.00) | (0.02) |
| Total Assets | -0.0374 | 0.0893 | 0.0474 | 0.0772 |
| | (0.87) | (0.59) | (0.20) | (0.52) |
| Leverage | -0.0195 | 0.00440 | -0.00678** | 0.00172 |
| | (0.16) | (0.64) | (0.02) | (0.73) |
| ROA | 0.0491** | 0.00628 | 0.00319 | 0.00385 |
| | (0.02) | (0.67) | (0.11) | (0.50) |
| Market-to-Book Ratio | -0.152*** | 0.0171 | 0.00868 | 0.0178 |
| | (0.01) | (0.81) | (0.70) | (0.70) |
| Tangibility | 0.0306*** | -0.00864 | -0.00157 | -0.00953** |
| | (0.01) | (0.29) | (0.58) | (0.03) |
| Liquidity | 0.0755 | 0.00857 | -0.000821 | -0.0160 |
| | (0.50) | (0.90) | (0.97) | (0.44) |
| Sales Growth | 0.00118 | -0.00718*** | 0.000270 | -0.000553 |
| | (0.20) | (0.01) | (0.65) | (0.55) |
| Market Share | -0.0101 | -0.0277* | -0.00413 | -0.00932 |
| | (0.59) | (0.09) | (0.20) | (0.20) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes |
| Observations | 13,622 | 14,638 | 13,622 | 14,638 |
| Pseudo R-squared | 0.739 | 0.793 | 0.504 | 0.577 |

**Table IA.4 Mandatory ESG Disclosure and M&As: Callaway and Sant'Anna Estimator**

This table reports the effects of mandatory ESG disclosure requirements on corporate acquisitions of green and brown assets using the Callaway and Sant'Anna (2021) estimator. *Mandatory Disclosure* is an indicator variable that takes one if the home country of a firm has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. Control variables include firm size (Total Assets), financial leverage (Leverage), return-on-assets (ROA), market-to-book ratio (Market-to-Book), asset tangibility (Tangibility), liquidity of assets (Liquidity), growth rate of net sales (Sales Growth), and share of product markets (Market Share). Detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Log(# Green Patents of Targets) | Log(# ESG Incidents of Targets) | Log(# Green Targets) | Log(# Brown Targets) |
| ATT (Mandatory Disclosure) | 32.06*** | -20.58* | 5.469* | -6.687* |
| | (0.00) | (0.06) | (0.06) | (0.07) |
| Controls | Yes | Yes | Yes | Yes |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes |
| Observations | 4,653 | 4,870 | 4,653 | 4,870 |

**Table IA.5 Timing of Adopting ESG Disclosure Mandates: The Duration Model**

This table estimates a Weibull hazard model where the "failure event" is the adoption of ESG disclosure mandate in a given country or region. The sample consists of all 90 countries over our sample period with treated countries dropped from the sample once they adopted ESG disclosure mandates. The key variables of interest, namely Log(# Acquisitions), Log($ Acquisitions), Log(# Divestitures), and Log($ Divestitures), represent the natural logarithmic transformation of the value of acquisitions (measured in count or dollar terms) plus one. In addition to these variables, we control for various country-level factors including Log (GDP), Log (GDP per capita), GDP Growth, Stocks Turnover, Stocks Traded / GDP, Market Capitalization / GDP, Tax Revenue / GDP, and Inflation. All independent variables are at the country level. Variable definitions are provided in the Appendix A1. Robust standard errors clustered by country are in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | | | Mandatory ESG Disclosure Event | | |
| Log(# Acquisitions) | 0.357 | | | | 0.524 |
| | (0.17) | | | | (0.24) |
| Log($ Acquisitions) | | 0.0357 | | | -0.124 |
| | | (0.63) | | | (0.45) |
| Log(# Divestitures) | | | 0.263 | | -0.198 |
| | | | (0.47) | | (0.71) |
| Log($ Divestitures) | | | | 0.118 | 0.159 |
| | | | | (0.32) | (0.46) |
| Log (GDP) | 0.0193 | 0.163 | -0.0409 | 0.000192 | 0.0444 |
| | (0.93) | (0.49) | (0.92) | (1.00) | (0.92) |
| Log (GDP per capita) | -0.316 | -0.263 | -0.321 | -0.335 | -0.330 |
| | (0.16) | (0.25) | (0.24) | (0.20) | (0.26) |
| GDP Growth | -0.0723 | -0.0631 | -0.0695 | -0.0650 | -0.0660 |
| | (0.24) | (0.28) | (0.25) | (0.26) | (0.28) |
| Stocks Turnover | -0.00425 | -0.00577 | -0.00512 | -0.00546 | -0.00346 |
| | (0.45) | (0.32) | (0.37) | (0.36) | (0.55) |
| Stocks Traded / GDP | 0.0118 | 0.0164** | 0.0156* | 0.0153* | 0.00849 |
| | (0.18) | (0.05) | (0.06) | (0.08) | (0.40) |
| Market Capitalization / GDP | 0.000576 | 0.000194 | -0.00108 | -0.000370 | 0.00270 |
| | (0.90) | (0.97) | (0.83) | (0.94) | (0.66) |
| Tax Revenue / GDP | 0.0537 | 0.0416 | 0.0449 | 0.0465 | 0.0618 |
| | (0.23) | (0.33) | (0.31) | (0.28) | (0.19) |
| Inflation | 0.0410 | 0.0673 | 0.0663 | 0.0555 | 0.0139 |
| | (0.60) | (0.33) | (0.34) | (0.46) | (0.88) |
| Constant | Yes | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes | Yes |
| Observations | 394 | 394 | 394 | 394 | 394 |

**Table IA.6 Mandatory ESG Disclosure and Volume of Cross-Border Mergers and Acquisitions**

This table reports how mandatory ESG disclosure requirements affect the dollar volume of mergers and acquisitions across different countries. Columns (1) and (2) present regressions of the logarithm of one plus the dollar volume of acquired target firms from countries with lower and higher Sustainable Development Goal (SDG) scores than the acquirer's home country, respectively. Columns (3) and (4) show regressions of the logarithm of one plus the dollar volume of acquired target firms from developing and developed countries, respectively. Only cross-border mergers and acquisitions are included in the analysis. Other variables are defined as previously; detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions. Coefficients are multiplied by 100 for the sake of readability. *p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) Log($ Targets from High-SDG-Score Countries) | (2) Log($ Targets from Low-SDG-Score Countries) | (3) Log($ Targets from Advanced Countries) | (4) Log($ Targets from Developing Countries) |
|---|---|---|---|---|
| Mandatory Disclosure | 3.692* | -5.323** | 6.822* | -3.365*** |
| | (0.08) | (0.01) | (0.10) | (0.00) |
| Total Assets | 3.624*** | 3.595*** | 7.351*** | 1.217* |
| | (0.00) | (0.00) | (0.00) | (0.08) |
| Leverage | -0.123*** | -0.205*** | -0.281*** | -0.109*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| ROA | 0.0663** | 0.0407 | 0.108*** | 0.00560 |
| | (0.03) | (0.10) | (0.00) | (0.58) |
| Market-to-Book Ratio | 1.825*** | 2.658*** | 4.534*** | 0.343 |
| | (0.00) | (0.00) | (0.00) | (0.16) |
| Tangibility | -0.0275 | -0.0471 | -0.0200 | -0.0180 |
| | (0.52) | (0.37) | (0.71) | (0.59) |
| Liquidity | 0.427* | 0.0873 | 0.651** | -0.0730 |
| | (0.07) | (0.64) | (0.02) | (0.47) |
| Sales Growth | 0.0125 | 0.00106 | 0.0186** | -0.00286 |
| | (0.10) | (0.82) | (0.02) | (0.45) |
| Market Share | -0.00385 | 0.131 | 0.0811 | 0.0788 |
| | (0.96) | (0.18) | (0.46) | (0.18) |
| Constant | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes |
| Observations | 50,762 | 50,762 | 50,762 | 50,762 |
| R-squared | 0.106 | 0.152 | 0.121 | 0.116 |

## Table IA.7 Mandatory ESG Disclosure and Alternative Deal Premiums

This table presents the effects of mandatory ESG disclosure requirements on alternative premium measures for acquisition and divestiture deals. The dependent variable in Columns (1) to (4) (Columns (5) to (8)) is the one-week (one-month) deal premium, which is the percentage difference between the offer price of a deal and the target firm's closing stock price one week (one month) prior to the deal announcement. *Mandatory Disclosure* is an indicator variable that takes one if a firm's home country has adopted mandatory ESG disclosure regulations in a given year and zero otherwise. # *Target Green Patents* is the number of green patents granted to the target firm in the year before the acquisition. # ESG Incidents is the number of negative ESG events experienced by the target firm over three years before the divestiture. Control variables are defined as previously; detailed definitions are provided in Table A.1 in the Appendix. Firm and year fixed effects are included in the regressions.*p*-values based on standard errors clustered at the country level are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | 1-Week Acquisition Premium | | 1-Week Divestiture Premium | | 1-Month Acquisition Premium | | 1-Month Divestiture Premium | |
| Mandatory Disclosure | 1.364 | 0.786 | -7.599** | -7.437* | 1.248 | 0.733 | -9.441** | -9.438** |
| | (0.71) | (0.84) | (0.05) | (0.06) | (0.73) | (0.84) | (0.02) | (0.03) |
| Mandatory Disclosure *# Target Green Patents | | 0.0542** | | | | 0.0480** | | |
| | | (0.01) | | | | (0.05) | | |
| Mandatory Disclosure * # ESG Incidents | | | | -0.141** | | | | -0.118* |
| | | | | (0.03) | | | | (0.09) |
| # Target Green Patents | | -0.0518*** | | | | -0.0609*** | | |
| | | (0.00) | | | | (0.01) | | |
| # ESG Incidents | | | | 0.00195 | | | | -0.0434 |
| | | | | (0.97) | | | | (0.31) |
| Total Assets | 0.662 | 0.702 | 0.939 | 0.845 | 0.759 | 0.795 | -1.143 | -1.254 |
| | (0.57) | (0.55) | (0.55) | (0.59) | (0.52) | (0.50) | (0.44) | (0.39) |
| Leverage | 0.0225 | 0.0219 | 0.0369 | 0.0364 | 0.00560 | 0.00508 | 0.0658 | 0.0651 |
| | (0.67) | (0.68) | (0.61) | (0.62) | (0.92) | (0.93) | (0.39) | (0.39) |
| ROA | 0.0309 | 0.0340 | -0.00331 | -0.00335 | 0.133** | 0.137** | 0.0164 | 0.0163 |
| | (0.57) | (0.53) | (0.89) | (0.89) | (0.04) | (0.03) | (0.56) | (0.56) |
| Market-to-Book Ratio | 0.157 | 0.136 | -0.705 | -0.716* | 0.286 | 0.260 | -0.762 | -0.775* |
| | (0.74) | (0.78) | (0.11) | (0.10) | (0.52) | (0.57) | (0.11) | (0.10) |
| Tangibility | 0.133** | 0.133** | 0.00604 | 0.00660 | 0.0975 | 0.0970 | 0.0705* | 0.0714* |
| | (0.03) | (0.04) | (0.86) | (0.85) | (0.17) | (0.18) | (0.09) | (0.08) |
| Liquidity | 0.0942 | 0.0951 | 0.210 | 0.213 | -0.0629 | -0.0611 | -0.0511 | -0.0482 |
| | (0.81) | (0.81) | (0.28) | (0.27) | (0.87) | (0.88) | (0.85) | (0.86) |
| Sales Growth | 0.00718 | 0.00720 | 0.00252 | 0.00263 | 0.0170* | 0.0170* | -0.00190 | -0.00176 |
| | (0.44) | (0.44) | (0.70) | (0.68) | (0.08) | (0.08) | (0.78) | (0.80) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Market Share | -0.0597 | -0.0693 | -0.000876 | 0.00816 | 0.00272 | -0.00792 | -0.0240 | -0.0150 |
| | (0.56) | (0.49) | (0.99) | (0.92) | (0.98) | (0.94) | (0.77) | (0.86) |
| Constant | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm Dummy | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cluster at Country Level | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 10,529 | 10,529 | 25,045 | 25,045 | 10,514 | 10,514 | 25,029 | 25,029 |
| R-squared | 0.618 | 0.619 | 0.740 | 0.740 | 0.622 | 0.623 | 0.731 | 0.731 |