

Financial Market Development as a Catalyst for Value Creation through CSR

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December 2025

Declarations of interest: none.

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Abstract

Growing evidence suggests that the link between corporate social responsibility (CSR) and firm value is contingent on factors related to the firm's contracting environment. We contribute to this important strand of the literature by examining whether and how financial market development affects the CSR–firm value relation. Using a panel of over 33,000 firm-year observations from 31 countries between 2002 and 2020, we find that CSR has a stronger positive effect on firm value in countries where financial markets – particularly equity markets – are more developed. Further analysis indicates that the positive effect of financial market development on the CSR-firm value relation can be attributed to the “discipline imposing” and “managerial learning” effects of financial markets on firms. To mitigate endogeneity concerns and strengthen causal inference, we adopt the fixed effects identification strategy pioneered by Rajan and Zingales (1998) and document that financial market development is a catalyst for value creation through CSR especially in industries more dependent on external capital. Our findings highlight the critical role of capital markets in influencing the value implications of CSR investments across global contexts.

Keywords: corporate social responsibility; firm value; financial market development; equity markets; credit markets; external finance dependence

JEL Classification Q01, G15, R11, M14

1. Introduction

The beginning of this century saw a significant increase in the calls for business to actively contribute to solving the many environmental and social challenges facing our planet.¹ Companies from around the world responded to these calls by engaging in environmental, social, and governance (ESG) activities and embedding corporate social responsibility (CSR) into their business operations.² At the same time, however, there has been an intense debate among academics, practitioners, and politicians about the value implications of firms' ESG/CSR activities.³ On one hand, CSR can be associated with reductions in risk (the “insurance-like” property of CSR) and improvements in overall firm performance (the “doing well by doing good” mantra). On the other hand, CSR can be associated with greenwashing, social externalities, and agency problems, and therefore, undermine shareholder value. As documented in a recent literature review by Gillan et al. (2021), research on the CSR-value relation has produced inconclusive results with theoretical arguments and empirical evidence supporting both the positive and negative view of the value implications of CSR. The conflicting evidence on the relation between CSR and firm value is not so surprising if we consider the possibility that there may not be a *general* relation but instead a relation that is *contingent* on factors related to the firm's contracting environment.⁴ This is the view that we adopt in this study and proceed to investigate the effect of financial market development – arguably one of the most important and extensively researched country-level characteristic in the finance and economics disciplines – on the link between CSR and firm value.

This contingent view of the CSR-value relation is not new. Indeed, an influential study by Barnett (2007) made such a call to “...reorient CSR research away from the long-fought battle for replicable

¹ At the forefront of these calls was the United Nations and its Secretary-General at the time Kofi Annan (1997-2006). During Mr. Annan's tenure at the helm of the United Nations, the United Nations Global Compact (UNGC) and the Principles for Responsible Investment (PRI) initiatives were established.

² Currently, the UNGC (the world's largest corporate sustainability initiative) and PRI (the world's leading proponent of responsible investment) have more than 10,000 and 5,000 signatories, respectively.

³ For simplicity, we use the terms CSR and ESG interchangeably in this article.

⁴ This is somewhat analogous to the literature on the relation between board structure and firm value and the arguments against searching for a “one size fits all” solution (Coles et al., 2008).

empirical findings of the financial returns to CSR in general and toward a quest for deeper understanding of the underlying drivers of whether and when particular firms may earn positive financial returns from CSR?” (p. 795). Despite the fact that this article was published almost two decades ago, in a comprehensive review of the literature on the factors affecting the relation between CSR and firm performance, Grewatsch & Kleindienst (2017) conclude that “...despite long-standing calls to take a contingency perspective on the CS–CFP relationship, this research is underdeveloped...[and] the overall attention that this research has attracted is rather low” (p. 412). In the present study we aim to contribute to this fundamentally important but underexplored strand of the literature.

We focus on the role of financial market development as a determinant of the CSR-value link because the extant literature is largely limited to firm- or industry-level moderators such as managerial characteristics, ownership structure, customer awareness, product differentiation, or clean versus dirty industries (Aguinis & Glavas, 2012; Baird et al., 2012; Kim & Statman, 2012; Dixon-Fowler et al., 2013; Servaes & Tamayo, 2013; Albuquerque, Koskinen, and Zhang, 2019; Li et al., 2021). More importantly, the services that the financial sector and its ecosystem of participants provide – reducing information asymmetry, adverse selection, and moral hazard problems and the information feedback mechanism from secondary market prices to the actions of real decision makers (Bond et al., 2012) – are likely to impact both the firm’s ability to invest in CSR related activities and the returns to those activities.

Using a sample of more than 33,000 firm-year observations from 31 countries during the period from 2002 to 2020, we find that financial market development has a strong positive effect on the relation between CSR and firm value. Further analysis indicates that this positive effect is largely driven by the development of equity markets and can be attributed to the “discipline imposing” and “managerial learning” effects of financial markets on firms.

The main econometric challenge when trying to identify the effect of financial market development on the relation between CSR and firm value is properly addressing the inherent endogeneity concerns. We do this by adopting the fixed effects identification strategy proposed by Rajan and Zingales (1998) in their study of the relation between financial market development and economic growth. Their strategy is based

on the following argument: “...financial development should disproportionately help firms (or industries) typically dependent on external finance for their growth. Such a finding could be the “smoking gun” in the debate about causality” (1998, p. 560). In our setting, this translates to testing the hypothesis that the effect of financial market development on the CSR-value relation is stronger in industries more dependent on external finance. We document that this is indeed the case.

Our study makes several important contributions to different strands of the literature. First, we contribute to the vast literature on the CSR-value relation by providing evidence consistent with the view that this relation is contingent on factors related to the firm’s contracting environment (Barnett, 2007; Grewatsch & Kleindienst, 2017). Second, we directly contribute to the international business (IB) literature by extending prior work on the impact of country-level institutions on CSR (Ioannou and Serafeim, 2012; El Ghoul et al., 2017). Finally, we contribute to the long-standing literature on the benefits of financial market development – the most important one being its positive effect on overall economic growth – by documenting that it also plays a key role in helping firms achieve a “win-win” scenario whereby CSR initiatives address broad social and environmental issue while simultaneously delivering improved financial performance and increasing firm value.

The remainder of the paper is organized as follows. Section 2 presents a brief literature review and hypothesis development. Section 3 describes our data and methodology. Section 4 reports the main empirical results regarding the impact of financial market development on the CSR-firm value relation. Section 5 explores some of the potential channels for our main results. In Sections 6 and 7, we provide concluding remarks and discuss some limitations and directions for future research.

2. Background and hypotheses development

Extensive research across business disciplines investigates the determinants and outcomes of firms’ ESG/CSR initiatives. The list of potential determinants includes firm’s leadership characteristics, ownership structure, and institutional environment and the list of potential outcomes includes firm’s risk profile, cost

of capital, and overall performance, among others.⁵ Most of the early literature was confined to U.S. based studies due to data availability, and therefore, research on CSR and national-level institutions was very limited. This changed with the publication of a seminal article by Ioannou and Serafeim (2012) who “...brought groundbreaking work on corporate social responsibility (CSR) and corporate social performance (CSP) to scholars and practitioners of international business (Napier et al., 2023)”⁶. These authors developed theory and provided empirical evidence establishing the importance of country-level institutions in CSR research. Subsequent studies have suggested that country-level factors may be even more important than firm-level factors as drivers of firms’ environmental and social performance (Cai et al., 2016). Prior literature has examined the impact of political, economic, legal, cultural, and even linguistic systems on CSR (Marano et al., 2017; Griffin et al., 2021; Carney et al., 2022; Ding et al., 2022; Shoham et al., 2024).

Most relevant to our research are the studies by El Ghoul, et al., (2017) and Griffin et al., (2021) who explicitly examine the impact of country-level institutions on the relation between CSR and firm value. Griffin et al., (2021) document that this relation is stronger in more individualistic societies. El Ghoul, et al., (2017) find that CSR is more positively related to firm value in countries where the absence of market-supporting institutions increases transaction costs and limits access to resources. The authors argue that CSR represents a non-market mechanism through which firms can compensate for these institutional voids.

To the best of our knowledge, no prior study has thoroughly investigated the impact of financial market development on the link between CSR and firm value.⁷ At the same time, we believe that capital markets can be a key determinant of the financial returns to CSR investments. Specifically, financial sector

⁵ See Gillan et al., (2021) for a recent review of the CSR/ESG literature.

⁶ The article by Ioannou and Serafeim (2012) received the 2022 *JIBS* Decade Award recognizing its contribution to the IB literature.

⁷ A recent study by Miletkov and Staneva (2025) documents that financial market development, and especially the development of equity markets, is positively related to firms’ CSR performance. The study, however, is entirely silent as to whether the documented increase in CSR activity is associated with improvements in firms’ financial performance and valuation. In their study of institutional voids, El Ghoul et al., (2017) also include measures of whether equity and credit markets provide adequate financing to companies. These variables, however, represent a crude measure of financial market development as they are based on an index from 0 to 10 and are obtained from an executive survey (source: IMD World Competitiveness Yearbook).

development reduces information asymmetry and agency costs and therefore mitigates the likelihood that CSR activities are a manifestation of private benefits of control (i.e. benefiting company insiders at the expense of outside investors) as suggested by Masulis & Reza (2015) and Cheng et al., (2023). This argument would predict a positive “discipline imposing” effect of financial market development on the CSR-value relation. Alternatively, as suggested by El Ghouli et al., (2017), if companies strategically employ CSR to increase transparency and reduce managerial opportunism, then the benefit of CSR would be greater in countries with less developed financial markets. This argument would predict a negative “benefit undermining” effect of financial market development on the CSR-value relation.

Financial market development can also impact the value-relevance of CSR initiatives through the information feedback mechanism from secondary market prices to the actions of real decision makers. This mechanism arises from the fundamental role of financial markets in the production and aggregation of information and is operationalized via the trading process. Firm managers who rarely have perfect information about every decision-relevant factor may learn new information from secondary market prices and use this information to guide their investment decisions (Luo, 2005; Chen et al., 2007; Bakke & Whited, 2010; Bond et al., 2012). This is especially true in the case of CSR initiatives whose value is highly dependent on the firm’s external environment.⁸ This argument would predict a positive “managerial learning” effect of financial market development on the CSR-value relation. We summarize the “discipline imposing”, “benefit undermining”, and “managerial learning” effects of financial market development on the CSR-value relation in Figure 1. We hypothesize that the combined positive effects of financial market development on the CSR-value relation would outweigh any negative effects and state our first hypothesis as follows:

⁸ The potential list of decision-relevant factors in the firm’s external environment about which outsiders may possess some incremental information that is useful to firm managers includes the preferences of various stakeholders, the actions of competitors, and the evolving social and political expectations regarding the appropriateness of firms incorporating ethical and social concerns into their objective function.

Hypothesis 1: Financial market development has a positive effect on the relation between CSR performance and firm value.

Our second hypothesis relates to the individual components of financial markets: equity and credit markets. Creditors may benefit from CSR mainly through risk mitigation (i.e. lower risk of default), and prior work documents a negative association between CSR performance and the cost of debt (see Gillan et al., 2021 for a review of the literature on the link between CSR and the cost of capital). However, due to the fixed payoff structure of debt as well as the limited collateral value of intangible investments such as CSR, lenders may have weaker incentives and fewer tools to underwrite long-horizon, discretionary CSR investments (Falato, Kadyrzhanova, Sim, and Steri, 2022; Edmans, 2023; Miletkov & Staneva, 2025).

By contrast, equity markets are better positioned to price and fund uncertain, intangible payoffs. First, the investment horizon of equity holders allows for supporting positive NPV projects with delayed cash flows, which is a key feature of value-increasing CSR investments (Edmans, 2023). Second, more developed equity markets enable governance through monitoring and activism, curbing self-dealing and greenwashing and improving the selection and scaling of CSR projects (Dimson et al., 2015; Dyck et al., 2019; Gillan et al., 2021). Lastly, the feedback mechanism which facilitates the transmission of private information to corporate managers operates primarily through the trading process in equity markets (Bond, Edmans & Goldstein, 2012). We therefore expect the equity channel to dominate and state our second hypothesis as follows:

Hypothesis 2. The positive effect of financial market development on the CSR–value relation is driven primarily by equity market development, while credit market development plays a weaker (or no) role.

3. Data and methodology

3.1. Sample construction

We begin our sample construction by collecting firm-level environmental and social (E&S) scores from the LSEG (formerly Refinitiv) Environmental, Social, and Governance (ESG) database, which provides comprehensive global coverage of corporate ESG score. Consistent with prior studies (Liang and Renneboog, 2017; Lins et al., 2017; Dyck et al., 2019; Griffin et al., 2021), we focus on the Environmental and Social pillars, as these components directly capture corporate social responsibility (CSR) activities.

Firm-level financial and market variables are obtained from the Thomson Reuters Worldscope/Datastream database. Country-level indicators, including measures of financial market development, are sourced from the World Bank's World Development Indicators (WDI) database. Additional institutional and cultural controls are collected from Hofstede (1980, 2001, 2011), La Porta et al. (2008), and Djankov et al. (2008). After merging these datasets and excluding observations with missing data, we obtain a final sample comprising 33,018 firm-year observations from 6,304 unique firms across 31 countries, spanning the years 2002 to 2020.⁹ Table 1 presents firm-year and country-year summary statistics for the key variables used in the empirical analysis. Table 2 highlights cross-country heterogeneity in financial development, cultural dimensions, and other economic and institutional characteristics, while Table 3 reports pairwise correlations among our main variables, showing moderate correlations and no evidence of severe multicollinearity.

3.2. Variable construction

3.2.1. Firm performance and firm-level controls.

We employ two measures of firm value: Tobin's Q, defined as the ratio of market value of equity plus book value of liabilities to book value of total assets, and Return on Assets (ROA), calculated as net income before extraordinary items divided by total assets.

⁹ Country coverage declines with the availability of country-level indicators. Requiring only non-missing firm-level data results in a sample that spans 58 countries. Adding controls for Hofstede's measure of individualism reduces this to 48 countries and some of the remaining country controls further limit coverage. As a robustness check, we re-estimate the main specifications in the larger sample that is not limited by country-level data availability while retaining country-year and industry-year fixed effects and find that our main conclusions continue to hold.

Firm-level control variables, informed by prior work (e.g. Griffin et al., 2021), include Size (logarithm of total assets in constant U.S. dollars), Sales growth (annual percentage growth in net sales), Leverage (ratio of total liabilities to total assets), R&D (ratio of R&D expenditures to net sales), R&D dummy (indicator for firms reporting R&D expenditures), and Tangibility (ratio of property, plant, and equipment to total assets). All continuous firm-level variables are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers.

3.2.2. Financial market development and CSR

To assess how financial market development affects the CSR–firm value relation, we construct interaction terms between each firm's E&S score, which serves as our proxy for CSR, and measures of financial market development. The E&S score is computed as the average of the environmental pillar and the social pillar for each firm each year. As in Hsu et al. (2014) and Miletkov and Staneva (2025), we distinguish between equity and credit market development. Equity market development (Equity) is proxied by the stock market capitalization to GDP ratio, while credit market development (Credit) is measured by domestic credit to the private sector provided by banks as a percentage of GDP. The aggregate measure of total financial market development (Fin Market Dev) is computed as the sum of the equity and credit components.

3.2.3. Additional country-level controls

To isolate the effect of financial market development from possibly correlated macroeconomic and institutional factors, we interact the E&S score with a set of country-level characteristics that can also affect the value implications of CSR. These include Hofstede's Individualism index, GDP per capita, a Common Law legal origin indicator, the Anti-Director Rights Index (ADRI), average years of Schooling, the share of Public Sector Employment, Government Effectiveness, and Control of Corruption. The choice of these variables is informed by prior work examining cross-country differences in the relation between CSR and firm value. For example, Griffin et al., 2021, link measures of individualism to stronger valuation of CSR, while the level of economic development (GDP per capita) is typically associated with a more sophisticated investor base and better disclosure practices, thus possibly enhancing the payoffs to CSR.

The broad legal and institutional environment could also affect the value of CSR. On the one hand, stronger contracting and investor protection (Control of Corruption, Common Law, ADRI) can reduce opportunism and greenwashing and increase the value of CSR. Similarly, human capital and state capacity (Schooling, Public Sector Employment, Government Effectiveness) can enhance firms' CSR efforts by driving demand and lowering implementation frictions. On the other hand, the institutional-voids view (El Ghoul et al., 2017) suggests that private-sector CSR investments can be particularly valuable when market-supporting institutions are lacking and/or when public provision of social goods and services is insufficient, which would imply a negative correlation between the value of CSR and those factors.

3.3. Empirical design

To examine the effect of financial market development on the value implications of firms' CSR initiatives, we estimate the following baseline model:

$$(1) \text{ Firm Value}_{i,j,k,t+1} = \theta_{j,t+1} + \delta_{k,t+1} + \beta_1(E\&S_{i,j,k,t} * \text{Fin Market Dev}_{k,t}) + \beta_2 X_{i,j,k,t} + \beta_3(E\&S \text{ score}_{i,j,k,t} * \text{Country controls}_{k,t}) + \varepsilon_{i,j,k,t+1}$$

In this model, *Firm Value* is measured with either Tobin's Q or ROA for firm *i* in industry *j*, country *k*, and year *t+1*. All independent variables are lagged by one year to alleviate concerns about reverse causality.¹⁰ *E&S* is our firm-level proxy for CSR. *Fin Market Dev* represents the aggregate measure of financial market development for country *k* in year *t*. *X* is a vector of firm-level control variables, which includes the firm's E&S score. This specification also includes industry-year and country-year fixed effects that account for any differences in firm-value across countries and across industries as well as dynamic changes in any such macroeconomic, institutional, or sector-specific factors. For example, any independent effect of financial market development on firm value that is common to all firms within a country-year (e.g., better financing

¹⁰ In the Appendix, we perform additional tests to mitigate concerns about reverse causality. We first re-estimate the model with longer lags and find consistent results. We also perform a Granger causality test following El Ghoul et al., (2017), where we estimate a bivariate dynamic panel system in which both firm value and CSR are regressed on their own lags, the lagged value of the other variable, and the full set of firm-level controls, including firm, industry-year and country-year fixed effects. We then test whether lagged firm value predicts CSR. Across all specifications, the coefficients on lagged firm value in the CSR equation are jointly insignificant, while lagged CSR remains a strong predictor of firm value. These results suggest that reverse causality from value to CSR is unlikely to explain our main findings.

access, liquidity, price efficiency) is absorbed by the country-year fixed effect. The coefficient on the $E\&S\ score * Fin\ Market\ Dev$ variable will therefore capture whether, within the same country and year, the effect of E&S on firm value is different in higher versus lower financial market development environments.

Lastly, we include interaction terms between the E&S score and our set of country-level characteristics that could potentially affect the value implications of the firm's CSR activities. Standard errors are clustered at the firm level to account for serial correlation in residuals.

To further examine the role that equity and credit market development play in determining the link between CSR and firm value, we modify Equation (1) and replace the aggregate measure of financial market development with its two components:

$$(2) Firm\ Value_{i,j,k,t+1} = \theta_{j,t+1} + \delta_{k,t+1} + \beta_{1,equity}(E\&S_{i,j,k,t} * Equity_{k,t}) + \beta_{1,credit}(E\&S_{i,j,k,t} * Credit_{k,t}) + \beta_2 X_{i,j,k,t} + \beta_3(E\&S\ score_{i,j,k,t} * Country\ controls_{k,t}) + \varepsilon_{i,j,k,t+1}$$

To address concerns about endogeneity, which are inherent in most studies relying on observational data, we implement an identification strategy based on the generalized difference-in-differences approach developed by Rajan and Zingales (1998), and subsequently adapted by Hsu et al. (2014), Wang (2022), and Miletkov and Staneva (2025), among others. The key argument in this approach is that financial development should have a more pronounced impact on firms in industries that rely more heavily on external financing. We adapt this argument to our empirical setting by introducing a triple interaction term to the baseline specification. Specifically, we interact the firm-level CSR measure with the proxies for financial development as well as with an industry-level measure of financial dependence.

Our measure of financial dependence is constructed for each industry-country pair. Specifically, we first compute the ratio of capital expenditures minus cash flow from operations to capital expenditures at the firm level. We then use the median value within each industry-country pair as our proxy for financial dependence. This approach avoids the limitation of using U.S. data to compute the industry proxies for

external financing needs and extrapolating them globally (Villani, 2021; Eppinger and Neugebauer, 2022).

The full model is estimated as follows:

$$\begin{aligned}
 (3) \text{ Firm Value}_{i,j,k,t+1} = & \theta_{j,t+1} + \delta_{k,t+1} + \beta_1(E\&S_{i,j,k,t} * \text{Fin Market Dev}_{k,t} * \\
 & \text{Fin Dep}_{j,k}) + \beta_2(E\&S_{i,j,k,t} * \text{Fin Market Dev}_{k,t}) + \beta_3(E\&S_{i,j,k,t} * \text{Fin Dep}_{j,k}) + \\
 & \beta_4(\text{Fin Market Dev}_{k,t} * \text{Fin Dep}_{j,k}) + \beta_5 * \text{Fin Dep}_{j,k} + \beta_6 X_{i,j,k,t} + \beta_7(E\&S \text{ score}_{i,j,k,t} * \\
 & \text{Country controls}_{k,t}) + \varepsilon_{i,j,k,t+1}
 \end{aligned}$$

Importantly, we estimate Model (3) hierarchically, including all lower-order terms (*E&S*Financial Dependence*, *E&S*Financial Market Development*, and *Financial Dependence*Financial Market Development*) alongside the triple interaction. This design addresses the concern that the CSR–firm value slope may vary systematically across industries based on their reliance on external financing, irrespective of the level of financial development. As CSR investment depends on resource availability and financing constraints (Sun & Gunia, 2018; Hong et al., 2012; Attig, 2024), firms in more externally dependent industries may be more selective in choosing CSR projects compared to firms in industries with greater financial flexibility. As a result, their CSR activities may be more likely to generate positive value. The interaction term *E&S*Financial Dependence* will absorb any tendency for CSR to be more (or less) value-relevant in externally dependent industries. The *E&S*Financial Market Development* term will capture the effect of financial development that is common across all industries and the *Financial Dependence*Financial Market Development* interaction term will capture differences in firm value associated with financial development that do not operate through CSR. Conditional on these lower-order interactions and our fixed effects, the coefficient on the triple interaction term identifies whether changes in financial development disproportionately affect the CSR–value relation in industries that depend more on external financing, which is the main effect of interest.

We also estimate a version of this model in which we replace the aggregate financial market development variable with separate measures for equity and credit market development. Lastly, our most

robust specification incorporates firm fixed effects to control for time-invariant unobserved heterogeneity at the firm level. In the subsequent section, we present and discuss our empirical findings based on these methodological approaches.

4. Empirical results

4.1. Main findings

Table 4 presents our main findings on the role of financial market development as a catalyst for value creation through CSR. In columns (1), (3), (5), and (7), we use Tobin's Q as a dependent variable, while the remaining columns utilize ROA. In columns (1) - (4) we estimate a model that includes the interaction term between total financial market development and the firm's E&S score, alongside our set of firm level financial controls, industry-year fixed effects, and country-year fixed effects. To facilitate the economic interpretation of the results, we first interact E&S with a binary indicator (Fin Market Dev Dummy) that is equal to one for firms operating in countries where the proxy for financial market development is above the sample median, and zero otherwise.¹¹ In columns (3) and (4) we replace this indicator variable with the continuous measure (Fin Market Dev).

We find that the coefficient on the interaction term is positive and statistically significant ($p < 0.01$) across all four specifications. In countries with low levels of financial market development, a one-standard-deviation increase in the E&S score (0.24) is associated with a 0.105 increase in Tobin's Q, which corresponds to approximately 5.5% of its unconditional mean. However, this effect is more than doubled in countries with highly developed financial markets. Column (2), where the dependent variable is ROA, reveals an even stronger effect: the impact of CSR on firm performance is roughly five times higher in countries above the median level of financial development compared to those below. Figure 2 graphically illustrates these effects, showing a steeper positive slope in the CSR–firm value relation under high financial

¹¹ Using the top quartile to capture high financial development instead yields similar results.

development conditions.¹² The coefficients on the firm-level control variables are largely consistent with prior empirical studies (e.g. Griffin et al., 2021).

While the specifications in columns (1)-(4) control for the direct effects of any macroeconomic, cultural, and institutional factors on firm value through the inclusion of county-year fixed effects, it is still possible that the observed interactive effect is due to financial market development being correlated with another country-level characteristic that also affects the CSR-value relation. For example, Griffin et al. (2021) show that the positive association between CSR and firm value is stronger in more individualistic societies. Indeed, Table 3 reveals that our proxy for financial market development is significantly correlated with other country characteristics, including Individualism, GDP, and the Anti-Director Index. Therefore, to isolate the independent effect of financial market development on the CSR-value link from the potentially confounding effect of these additional country characteristics, we add interaction terms between E&S and our full set of country-level controls (Equation 1) to the model and report the resulting coefficients in columns (5) and (6) of Table 4. While we see only a marginal increase in the adjusted R-squared, some of the interaction coefficients are statistically significant, underscoring the importance of including them in the regression. Importantly, the coefficient on the E&S * Fin Market Dev interaction term remains positive and statistically significant, reinforcing the idea that CSR contributes more to firm valuation and financial performance in countries with more developed financial markets, as postulated in Hypothesis 1.

In Columns 7 and 8, we further investigate whether the effect of financial development is driven primarily by equity or credit markets as discussed in Section 2. Specifically, we decompose the proxy for financial market development into its equity and credit market components and estimate Equation (2). The results indicate that the observed positive effect of financial market development on the CSR-value relation is primarily driven by equity markets. Specifically, the interaction between E&S and equity market

¹² The economic significance of our results remains strong when using the continuous measure of financial market development. Specifically, moving from the first (1.67) to the third quartile (2.34) of financial development, a one-standard-deviation increase in the E&S score is associated with an increase in Tobin's Q of 0.05 and an increase in ROA of 0.28%. These magnitudes are meaningful given the unconditional means of Tobin's Q (1.91) and ROA (4.70%).

development is positive and highly significant for both Tobin's Q and ROA. In contrast, the corresponding interaction with credit market development is statistically insignificant, suggesting limited influence from credit market conditions on the value implication of CSR. These findings provide strong support for our second hypothesis.

4.2. Robustness tests

To further validate our main findings, we implement several robustness tests. First, we adopt the generalized difference-in-differences framework introduced by Rajan and Zingales (1998) and examine whether the role of financial market development is more pronounced for firms operating in industries that are more reliant on external capital. If financial markets indeed facilitate CSR-related value creation, this effect should be stronger in settings where firms exhibit a greater reliance on external financing and thus benefit more from well-functioning financial markets.

Panel A of Table 5 presents the results from the estimation of Equation (3), which introduces a triple interaction term between the firm's E&S performance, financial market development, and our industry-country-specific proxy for financial dependence. In columns (1) and (2), we include industry-year and country-year fixed effects as well as the full set of firm-level controls and interactions between the E&S score and country-level characteristics. In columns (3) and (4), we further account for any unobserved heterogeneity across firms by adding firm fixed effects to the specification. Across all models, the triple interaction term is positive and statistically significant supporting the idea that financial market development acts as a catalyst for value creation through CSR, especially for firms more reliant on external financing.

Panel B of Table 5 further disentangles the effect of financial development by separately examining the roles of equity and credit markets. Consistent with our earlier results, we find that the triple interaction between financial dependence, E&S, and equity market development is positive and significant across all models. In contrast, the corresponding interactions involving credit market development are statistically insignificant. This provides additional evidence that the effect of financial development operates primarily

through equity markets, which are better positioned to finance long-horizon, intangible investments such as CSR.

As an additional robustness test, we re-estimate our main models after excluding all U.S. firms to ensure that our results are not driven by the United States, which represents over 40% of the sample.. The results remain qualitatively unchanged. We also test the robustness of our findings to alternative CSR measures by replacing our E&S score with the overall ESG score. Finally, we verify that our conclusions continue to hold when we use an alternative proxy for financial market development.¹³ For brevity, these additional results are not tabulated but are available upon request.

Taken together, the results from these robustness checks provide strong support for our main argument: the value implications of CSR are context-dependent and contingent on the development of a country's financial markets. While we acknowledge that establishing causal inference remains challenging in observational settings, our empirical design addresses multiple potential sources of endogeneity. In particular, our most stringent specification includes firm fixed effects and time-varying industry- and country-level fixed effects, which collectively account for both unobserved firm-specific heterogeneity as well as macroeconomic and industry shocks. The fact that our findings persist lends credibility to a causal interpretation and allows us to provide meaningful insights into the role of financial market development as a catalyst for value creation through CSR.

5. Potential channels

In the previous Section, we provide compelling evidence supporting our main hypothesis that financial market development – and especially the development of equity markets – has a positive effect on the relation between CSR performance and firm value. In this section, we test some of the potential channels for this positive effect.

¹³ Specifically, we use the financial development index developed by the International Monetary Fund (Svirydzenka, 2016). This index provides a comprehensive proxy for financial market development based on nine measures that capture the depth, access, and efficiency of financial systems across countries.

As discussed in Section 2, financial market development can positively impact the CSR-firm value relation through the “discipline imposing” and “managerial learning” effects. The former effect stems from the role of financial markets in reducing information asymmetry and agency costs while the latter effect is associated with the role of financial markets in the production and aggregation of information and the information feedback mechanism from secondary market prices to the actions of real decision makers (Bond et al., 2012).

To test the “managerial learning” channel, we introduce the indicator variable *Market Efficiency* which takes the value of one for countries with informationally efficient equity markets, and zero otherwise. Informationally efficient markets are identified based on the work of Fang and Jacobsen (2024), who use cross-country variation in the profitability of technical analysis trading strategies to assess the level of market efficiency across 50 countries.¹⁴ If managerial learning from secondary market prices is at least in part responsible for the positive effect of equity market development on the CSR-firm value relation, then we would expect this effect to be stronger in informationally efficient markets where market prices provide more reliable signals that can guide managerial decision making. To test this, we augment Equation (2) with the triple interaction term *Market Efficiency*E&S*Equity* and expect a positive and significant coefficient on it. The results of this estimation, which are reported in columns (1) and (2) of Table 6, support our conjecture.

Next, to test the “discipline imposing” channel, we introduce the indicator variable *Investor Protection* which takes the value of one for countries where the Anti-Director Rights Index (ADRI) has a value of three or more, and zero otherwise (Djankov et al., 2008).¹⁵ In their seminal article, La Porta et al., (1998) postulate that the ability of financial market participants to hold managers accountable and ensure that they act in shareholders’ interest critically depends on the country’s level of investor protection. Therefore, the “discipline imposing” channel would predict that the positive effect of equity market

¹⁴ Specifically, we use the information reported in Panel B of Table 1 in Fang and Jacobsen (2024) and identify informationally efficient markets as those where the average risk-adjusted returns for all four technical trading strategies are *not* significantly positive.

¹⁵ The value of three corresponds to the median ADRI score in our sample.

development on the CSR-firm value relation is stronger in countries with higher levels of investor protection. To test this, we augment Equation (2) with the triple interaction term *Investor Protection*E&S*Equity* and expect a positive and significant coefficient on it. The results of this estimation, which are reported in columns (3) and (4) of Table 6, support our prediction.

Finally, in Table 7, we perform robustness tests similar to the ones in Table 5 where we use the dependence on external financing to sharpen our identification strategy. Specifically, we re-estimate the models of Table 5, Panel B in subsamples based on low (high) *Market Efficiency* and low (high) *Investor Protection*. Consistent with the earlier findings, the results in Table 7 support the “managerial learning” and discipline imposing” channels as the coefficient on the interaction term *Fin Dep*E&S*Equity* is positive and significant only in the High Market Efficiency and High Investor Protection subsamples.

6. Discussion and conclusion

Over the past two decades, CSR research has garnered significant attention from practitioners, academics, and policy makers from around the world. Earlier studies were often limited to companies based in the U.S. or a few other developed nations due to data availability. This significantly limited scholars’ ability to investigate the role of country-level institutional factors as potential determinants of firms’ CSR activities and the returns to those activities. As the global CSR/ESG movement gained momentum, so did the coverage available through various data vendors.¹⁶ Some of the earlier studies that examined CSR in a global context were in the IB literature. Prominent examples are Ioannou and Serafeim (2012) and El Ghouli et al., (2017) who investigate the impact of nation-level institutions on CSR. We extend these prior studies by providing an in-depth analysis of the effect of financial market development on the relation between CSR performance and firm value.

¹⁶ The following document outlines (on page 6) how data coverage has expanded over time for one of the main CSR data providers:
https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-esg-scores-methodology.pdf

Using a sample of more than 33,000 firm-year observations from 31 countries during the period from 2002 to 2020, we find that financial market development, and especially the development of equity markets, acts as a catalyst for value creation through CSR across the globe. Further analysis indicates that this can be attributed, at least in part, to the “discipline imposing” effect of financial markets on managers (Edmans et al., 2012) and the “managerial learning” effect, where managers learn new information from secondary market prices and use it to guide their decisions (Chen et al., 2007; Bond et al., 2012).

Our study has important implications for both practitioners and policymakers. For managers of multinational companies, who are under constant pressure at home and abroad to increase their CSR involvement, it is critical to understand the institutional differences that lead to different expectations and different returns to CSR activity. Our findings indicate that managers should take into consideration the level of financial market development when formulating CSR strategy because the services that the financial sector and its ecosystem of participants provide increase the potential financial returns to CSR.

Our findings also have important implications for policymakers at the national and international level. In 2015, all 193 United Nations (UN) member states adopted the Sustainable Development Goals (SDGs) aimed at addressing the enormous environmental and social challenges facing our planet.¹⁷ Ten years later, progress has been slow. A recent UN report concludes that “...only 17 percent of the SDG targets are on track, nearly half are showing minimal or moderate progress, and progress on over one third has stalled or even regressed.” (UN DESA, 2024). From the onset of the SDG initiative, it was clear that these ambitious goals could not be achieved without enlisting the support of the private sector.¹⁸ Given the private sector’s orientation toward profit maximization and corporations’ fiduciary duty to shareholders, it is crucial for policymakers to identify the institutional factors that can stimulate a positive relation between firms’ CSR initiatives and financial performance. Some of these factors such as the level of individualism

¹⁷ <https://www.un.org/sustainabledevelopment/>

¹⁸ In 1999, the UN Secretary-General began his address to the World Economic Forum in Davos with the following remarks “On my previous visits, I told you of my hopes for a creative partnership between the United Nations and the private sector... And I stated quite frankly that, without your know-how and your resources, many of the objectives of the United Nations would remain elusive.” Source: <https://press.un.org/en/1999/19990201.sgsm6881.html>

in society (Griffin et al., 2021) are almost impossible for policymakers to influence. However, some of the factors such as the ones we identify in this study are squarely within the purview of policymakers. By promoting the development of financial markets and especially of the equity markets, policymakers can foster an environment where firms' CSR activities achieve the dual objective of addressing environmental and social challenges while simultaneously creating value for their shareholders.

7. Limitations and directions for future research

While our empirical design employs a rigorous fixed effects framework and a comprehensive set of robustness tests to address omitted variable bias and reverse causality, we acknowledge that these techniques cannot fully eliminate such endogeneity concerns. Therefore, the causal interpretation of our findings should be approached with caution. Future research can potentially identify quasi-natural experiments related to changes in the level of financial development and utilize them to validate the mechanisms we identify and sharpen causal inference.

Another potential limitation of our study is that, while we establish the importance of financial market development as a determinant of the value implications of CSR activities across a broad international sample, it is possible that this effect is impacted by other country-level factors. Future research could examine how broad institutional and economic factors interact with each other and whether they reinforce or offset the influence of financial market development. Additionally, investigating firm- and investor-level heterogeneity in the valuation of CSR under different financial market conditions could yield further insight into how and for whom “doing good” translates into “doing well.”

Finally, while the overarching theme of our study is the quest to better understand the financial performance implications of CSR, a critically important question remains: Are firms' CSR activities “successful” in terms of making a meaningful contribution toward addressing the environmental and social challenges facing our planet? Future research should explore whether CSR initiatives lead to measurable

progress on outcomes such as those outlined in the SDGs. We hope to take part in advancing this important line of inquiry in future work.

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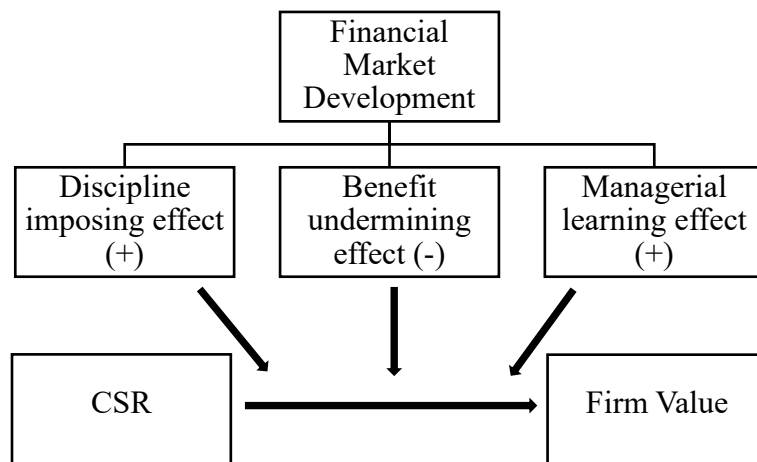


Figure 1.

The figure illustrates the channels through which financial market development may affect the relation between corporate social responsibility (CSR) performance and firm value.

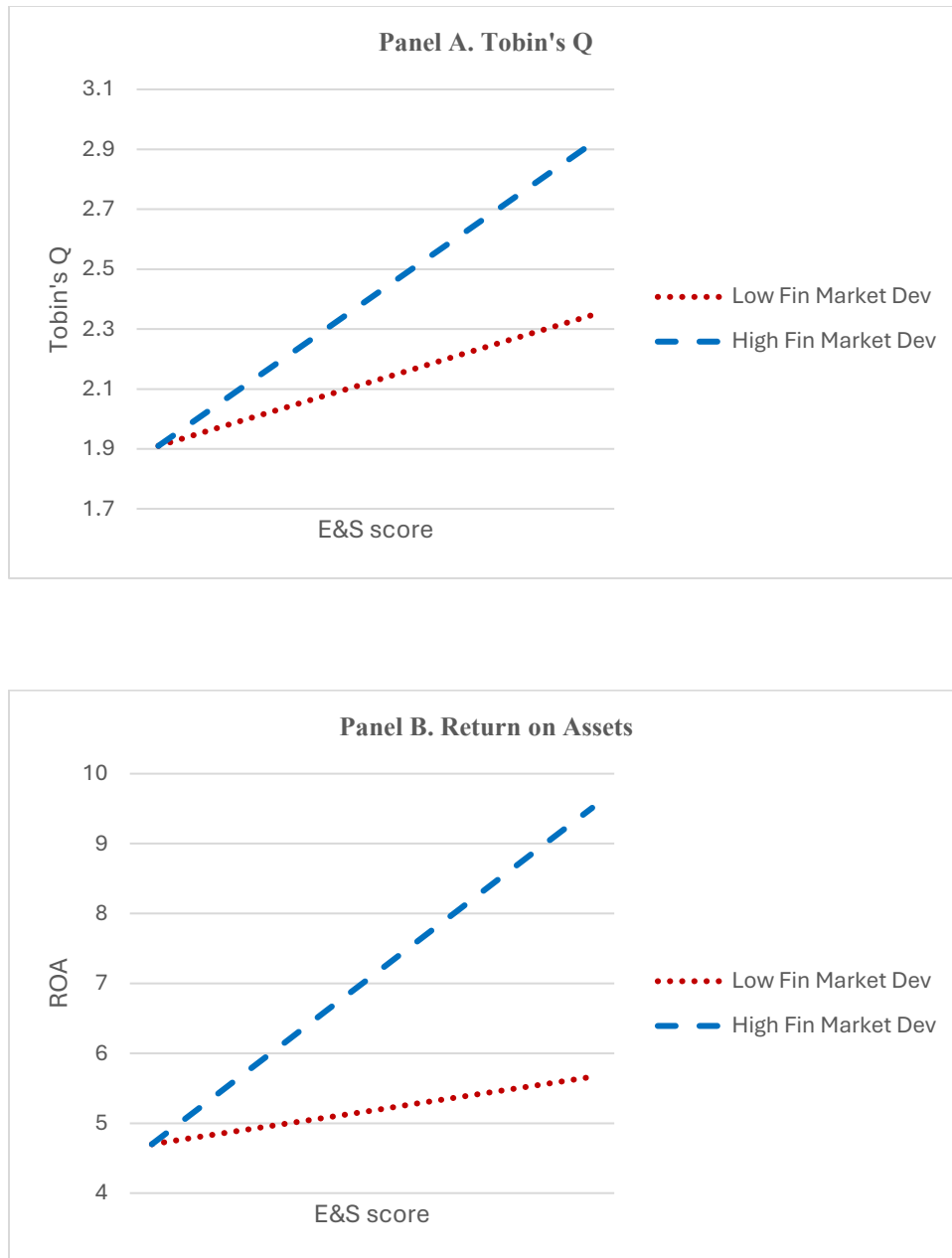


Figure 2.

The figure illustrates the effect of the level of financial market development on the relation between firm value and CSR based on the estimated effects reported in the first two columns of Table 4. Firms with High (Low) financial market development are those operating in countries where the level of financial market development is above (below) the median value in our sample.

Table 1. Descriptive Statistics

The table reports summary statistics for all variables used in the empirical analysis. The full sample includes 33,018 firm-year observations over the 2002–2020 period. Panel A presents descriptive statistics at the firm-year level, while Panel B summarizes country-level variables at the country-year level. Statistics reported include the mean, standard deviation, and selected percentiles.

Panel A: Firm-year level summary statistics						
	N	Mean	SD	p5	p50	p95
Tobin's Q	33,018	1.91	1.42	0.86	1.40	4.87
ROA	33,018	4.70	9.18	-8.67	4.87	17.35
E&S	33,018	0.38	0.24	0.07	0.34	0.82
Size	33,018	10.63	1.83	7.74	10.55	13.76
Sales growth	33,018	0.10	0.30	-0.21	0.06	0.50
Leverage	33,018	0.26	0.19	0.00	0.24	0.60
R&D	33,018	2.64	8.21	0.00	0.00	15.93
R&D dummy	33,018	0.39	0.49	0.00	0.00	1.00
Tangibility	33,018	0.28	0.27	0.01	0.19	0.83
Financial Dependence	33,018	-2.56	4.03	-11.30	-1.43	0.64
Equity	33,018	1.20	0.53	0.37	1.22	1.93
Credit	33,018	0.81	0.44	0.49	0.54	1.70
Fin Market Dev	33,018	2.02	0.58	1.04	2.00	2.92
Individualism	33,018	74.63	24.52	20.00	90.00	91.00
GDP	33,018	10.41	0.95	8.66	10.91	11.02
Common	33,018	0.71	0.45	0.00	1.00	1.00
Anti-Director Index	33,018	3.34	1.01	1.00	3.00	5.00
Schooling	33,018	11.60	2.37	7.12	12.69	13.42
Public	33,018	0.17	0.06	0.09	0.14	0.31
Gov Effectiveness	33,018	1.20	0.57	0.00	1.45	1.69
Corruption	33,018	1.04	0.75	-0.46	1.29	1.94

Panel B: Country-year level summary statistics						
	N	Mean	SD	p5	p50	p95
Equity	361	0.75	0.56	0.19	0.61	1.93
Credit	361	0.84	0.41	0.28	0.79	1.62
Fin Market Dev	361	1.60	0.75	0.58	1.45	2.97
Individualism	361	51.87	23.74	16.00	55.00	90.00
GDP	361	9.76	1.11	7.91	9.83	11.33
Common	361	0.26	0.44	0.00	0.00	1.00
Anti-Director Index	361	3.32	1.18	2.00	3.00	5.00
Schooling	361	9.67	2.19	5.39	9.89	12.90
Public	361	0.19	0.08	0.08	0.20	0.34
Gov Effectiveness	361	0.81	0.73	-0.23	0.74	1.82
Corruption	361	0.65	0.97	-0.59	0.66	2.04

Table 2. Country-level Summary Statistics

This table reports country-level averages for the key variables used in empirical analysis.

Country	N	Equity	Credit	Fin Market Dev	Individu alism	GDP	Common	Anti- Director Index	Schooling	Public	Gov Effective ness	Corrup- tion
Argentina	122	0.11	0.14	0.25	46.00	9.50	0.00	2.00	9.48	0.18	0.04	-0.28
Australia	3,079	1.09	1.23	2.32	90.00	10.90	1.00	4.00	11.68	0.23	1.67	1.89
Austria	267	0.32	0.91	1.22	55.00	10.69	0.00	2.50	9.79	0.23	1.63	1.64
Belgium	290	0.69	0.61	1.30	75.00	10.60	0.00	3.00	10.74	0.36	1.57	1.45
Brazil	891	0.54	0.58	1.12	38.00	9.06	0.00	5.00	7.58	0.12	-0.24	-0.23
Chile	309	1.00	0.77	1.77	23.00	9.45	0.00	4.00	9.68	0.09	1.01	1.26
China	2,142	0.63	1.40	2.03	20.00	8.86	0.00	1.00	7.10	0.15	0.27	-0.38
Colombia	131	0.44	0.45	0.89	13.00	8.71	0.00	3.00	8.45	0.04	-0.05	-0.36
France	1,139	0.80	0.93	1.72	71.00	10.50	0.00	3.50	10.48	0.32	1.48	1.37
Germany	941	0.52	0.79	1.31	67.00	10.64	0.00	3.50	12.69	0.22	1.55	1.82
Greece	167	0.28	1.02	1.30	35.00	9.88	0.00	2.00	10.22	0.22	0.37	-0.03
Hungary	35	0.16	0.40	0.56	80.00	9.47	0.00	2.00	12.14	0.25	0.54	0.15
India	997	0.89	0.50	1.40	48.00	7.28	1.00	5.00	5.34	0.11	0.04	-0.40
Indonesia	135	0.47	0.33	0.80	14.00	8.24	0.00	4.00	7.26	0.10	0.20	-0.41
Ireland	243	0.46	1.07	1.52	70.00	10.87	1.00	5.00	12.06	0.27	1.47	1.61
Italy	253	0.28	0.89	1.17	76.00	10.37	0.00	2.00	9.46	0.20	0.40	0.20
Luxembourg	134	1.28	0.92	2.20	60.00	11.57	0.00	2.00	11.05	0.29	1.68	2.01

Mexico	365	0.36	0.23	0.58	30.00	9.20	0.00	3.00	8.29	0.13	0.05	-0.67
Morocco	26	0.51	0.62	1.13	46.00	8.03	0.00	2.00	4.24	0.09	-0.21	-0.33
Norway	121	0.68	1.24	1.92	69.00	11.24	0.00	3.50	11.80	0.33	1.87	2.09
Panama	21	0.24	0.80	1.04	11.00	9.56	0.00	2.00	9.15	0.16	0.09	-0.60
Peru	120	0.43	0.42	0.85	16.00	8.71	0.00	3.50	8.68	0.09	-0.24	-0.49
Philippines	273	0.76	0.39	1.15	32.00	7.97	0.00	4.00	8.17	0.08	0.11	-0.57
Poland	351	0.31	0.51	0.82	60.00	9.42	0.00	2.00	11.40	0.19	0.59	0.61
Portugal	93	0.32	1.35	1.67	27.00	9.88	0.00	2.50	7.14	0.23	1.08	0.96
South Africa	985	2.39	0.63	3.01	65.00	8.72	1.00	5.00	9.37	0.18	0.17	-0.04
Spain	614	0.75	1.39	2.13	51.00	10.17	0.00	5.00	10.28	0.22	1.00	0.89
Switzerland	489	1.99	1.59	3.58	68.00	11.32	0.00	3.00	13.11	0.24	1.95	2.09
Thailand	430	0.97	1.10	2.07	20.00	8.65	1.00	4.00	7.30	0.09	0.20	-0.44
UK	1,978	1.16	1.65	2.81	89.00	10.67	1.00	5.00	11.93	0.30	1.62	1.71
USA	15,877	1.43	0.51	1.94	91.00	10.95	1.00	3.00	13.42	0.14	1.47	1.29

Table 3. Pairwise Correlations

The table presents pairwise correlation coefficients between key variables used in the analysis. One star (*) indicates significance at the 5% level.

Variables	1	2	3	4	5	6	7	8	9	10	11
(1)Tobin's Q	1										
(2)ROA	0.243*	1									
(3)E&S	-0.077*	0.091*	1								
(4)Size	-0.284*	0.054*	0.539*	1							
(5)Sales growth	0.114*	-0.012*	-0.138*	-0.089*	1						
(6)Leverage	-0.148*	-0.019*	0.111*	0.191*	-0.047*	1					
(7)R&D	0.330*	-0.224*	-0.073*	-0.183*	0.099*	-0.110*	1				
(8)R&D dummy	0.280*	0.037*	0.061*	-0.074*	0.013*	-0.081*	0.406*	1			
(9)Tangibility	-0.136*	-0.002	0.072*	-0.029*	-0.029*	0.280*	-0.182*	-0.145*	1		
(10)Financial Dependence	0.104*	0.005	0.036*	-0.205*	0.001	0.164*	0.142*	0.256*	0.473*	1	
(11)Equity	0.097*	-0.022*	-0.099*	-0.174*	-0.038*	-0.034*	0.107*	-0.025*	-0.016*	-0.041*	1
(12)Credit	-0.040*	0.017*	0.024*	-0.01	0.016*	-0.043*	-0.073*	0.052*	0.008	0.011*	-0.291*
(13)Fin Market Dev	0.058*	-0.007	-0.072*	-0.165*	-0.022*	-0.064*	0.041*	0.017*	-0.008	-0.029*	0.688*
(14)Individualism	0.059*	-0.065*	-0.075*	-0.162*	-0.008	-0.053*	0.110*	-0.023*	-0.019*	-0.036*	0.560*
(15)GDP	0.035*	-0.097*	-0.084*	-0.111*	-0.017*	-0.039*	0.126*	0.011	-0.032*	-0.01	0.357*
(16)Common	0.112*	-0.023*	-0.151*	-0.231*	0.012*	-0.036*	0.082*	-0.038*	0.011*	-0.065*	0.647*
(17)Anti-Director Index	-0.060*	0.041*	0.220*	-0.072*	-0.021*	0.002	-0.096*	-0.153*	0.048*	-0.058*	0.078*
(18)Schooling	0.051*	-0.081*	-0.086*	-0.123*	-0.030*	-0.043*	0.141*	-0.006	-0.026*	-0.026*	0.528*
(19)Public Sector	-0.106*	0.022*	0.177*	0.069*	-0.009	-0.047*	-0.069*	0.006	0.009	0.024*	-0.236*
(20)Gov Effectiveness	0.045*	-0.067*	-0.068*	-0.085*	-0.009	-0.059*	0.109*	0.063*	-0.028*	-0.006	0.314*
(21)Corruption	0.004	-0.068*	-0.016*	-0.103*	-0.01	-0.062*	0.073*	0.012*	-0.006	-0.007	0.251*

Table 3. Pairwise correlations

Variables	12	13	14	15	16	17	18	19	20	21
(12)Credit	1									
(13)Fin Market Dev	0.494*	1								
(14)Individualism	-0.292*	0.287*	1							
(15)GDP	-0.072*	0.270*	0.812*	1						
(16)Common	-0.281*	0.375*	0.752*	0.405*	1					
(17)Anti-Director Index	0.049*	0.109*	0.152*	-0.160*	0.259*	1				
(18)Schooling	-0.335*	0.226*	0.886*	0.914*	0.564*	-0.080*	1			
(19)Public Sector	0.545*	0.199*	0.107*	0.203*	-0.242*	0.292*	0.002	1		
(20)Gov Effectiveness	0.062*	0.333*	0.789*	0.903*	0.434*	-0.060*	0.822*	0.338*	1	
(21)Corruption	0.096*	0.301*	0.780*	0.869*	0.385*	0.123*	0.784*	0.435*	0.947*	1

Table 4. Financial Market Development and the Value Implications of CSR

This table presents the results of estimating Equations (1) and (2), testing whether financial market development affects the relation between environmental and social (E&S) performance and firm value. In columns (1), (3), (5), and (7), the dependent variable is Tobin's Q measured at time $t+1$, while columns (2), (4), (6), and (8) use Return on Assets (ROA) at time $t+1$. All specifications include firm-level controls as well as industry-year and country-year fixed effects. The standard errors used to compute t -statistics (reported in brackets) are robust to heteroskedasticity and clustering at the firm level. Coefficient estimates significantly different from zero at the 10%, 5%, and 1% level are identified with *, **, and ***, respectively.

	1	2	3	4	5	6	7	8
	Tobin's Q_{t+1}	ROA $_{t+1}$	Tobin's Q_{t+1}	ROA $_{t+1}$	Tobin's Q_{t+1}	ROA $_{t+1}$	Tobin's Q_{t+1}	ROA $_{t+1}$
E&S*Fin Market Dev Dummy	0.574*** [5.93]	3.848*** [6.22]						
E&S*Fin Market Dev			0.281*** [3.48]	1.741*** [2.94]	0.282*** [2.75]	1.410** [2.01]		
E&S*Equity							0.489*** [4.07]	2.697*** [3.14]
E&S*Credit							-0.125 [-0.63]	-1.121 [-0.89]
Size	-0.197*** [-16.01]	0.109 [1.25]	-0.192*** [-15.65]	0.142 [1.63]	-0.201*** [-16.01]	0.075 [0.85]	-0.201*** [-16.00]	0.076 [0.87]
Sales growth	0.416*** [10.83]	0.672** [2.14]	0.415*** [10.80]	0.664** [2.11]	0.420*** [10.92]	0.724** [2.30]	0.420*** [10.91]	0.722** [2.29]
Leverage	-0.621*** [-6.88]	-4.452*** [-8.21]	-0.613*** [-6.77]	-4.397*** [-8.09]	-0.617*** [-6.82]	-4.353*** [-8.00]	-0.613*** [-6.77]	-4.325*** [-7.96]
R&D	0.026*** [9.73]	-0.336*** [-15.60]	0.026*** [9.73]	-0.336*** [-15.56]	0.026*** [9.87]	-0.334*** [-15.57]	0.026*** [9.88]	-0.334*** [-15.56]
R&D dummy	0.211*** [4.99]	0.761*** [3.20]	0.207*** [4.89]	0.731*** [3.06]	0.209*** [4.98]	0.768*** [3.25]	0.209*** [4.97]	0.764*** [3.24]
Tangibility	-0.189*** [-2.74]	-0.574 [-1.27]	-0.189*** [-2.74]	-0.576 [-1.27]	-0.182*** [-2.63]	-0.515 [-1.14]	-0.186*** [-2.69]	-0.543 [-1.20]
E&S	0.437*** [5.11]	0.964* [1.85]	0.165 [0.98]	-0.584 [-0.48]	-3.623* [-1.87]	-10.36 [-0.96]	-4.158** [-2.17]	-13.689 [-1.28]
E&S*Individualism					0.021*** [2.71]	0.167*** [3.87]	0.014* [1.82]	0.126*** [2.70]
E&S*GDP					0.273	2.608*	0.459**	3.767***

					[1.29]	[1.94]	[2.17]	[2.80]
E&S*Common					-0.530*	-0.694	-0.417	0.011
					[-1.90]	[-0.41]	[-1.48]	[0.01]
E&S*Anti-Director Index					0.066	-0.394	0.055	-0.462
					[0.77]	[-0.82]	[0.63]	[-0.96]
E&S*Schooling					0.071	-1.541***	-0.033	-2.192***
					[0.96]	[-2.92]	[-0.41]	[-4.06]
E&S*Public					-3.001**	-41.211***	-1.844	-34.010***
					[-2.41]	[-5.05]	[-1.37]	[-3.84]
E&S*Gov Effectiveness					-0.441	-4.947**	-0.462	-5.079**
					[-1.30]	[-2.37]	[-1.36]	[-2.44]
E&S*Corruption					-0.21	3.489**	-0.045	4.514***
					[-0.78]	[2.05]	[-0.16]	[2.66]
cons	3.745***	4.266***	3.695***	3.916***	3.796***	4.666***	3.793***	4.648***
	[31.41]	[4.89]	[31.01]	[4.46]	[31.22]	[5.33]	[31.22]	[5.31]
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	33,018	33,018	33,018	33,018	33,018	33,018	33,018	33,018
adj. R-sq	31.6%	18.9%	31.5%	18.7%	31.9%	19.2%	31.9%	19.2%

Table 5. Robustness Tests - Dependence on External Financing

This table presents robustness tests examining whether the effect of financial market development on the E&S–firm value relation is more pronounced for firms in industries that are more dependent on external finance. In both panels, the dependent variables are Tobin's Q and ROA measured at time $t+1$. Panel A uses overall financial market development, while Panel B distinguishes between equity and credit markets. All specifications include firm-level controls, interactions between E&S and country-level characteristics, and industry-year and country-year fixed effects. Columns (3) and (4) further include firm fixed effects. The standard errors used to compute t -statistics (reported in brackets) are robust to heteroskedasticity and clustering at the firm level. Coefficient estimates significantly different from zero at the 10%, 5%, and 1% level are identified with *, **, and ***, respectively.

Panel A. Financial Market Development				
	1	2	3	4
	Tobin's Q_{t+1}	ROA_{t+1}	Tobin's Q_{t+1}	ROA_{t+1}
Fin Dep*E&S*Fin Market Dev	0.035** [2.02]	0.477*** [3.73]	0.039** [2.57]	0.320*** [2.85]
E&S*Fin Market Dev	0.362*** [3.29]	2.531*** [3.25]	0.288*** [2.86]	0.929 [1.16]
Fin Dep*E&S	-0.084** [-2.44]	-0.371 [-1.47]	-0.136*** [-3.65]	-0.595*** [-2.73]
Fin Dep*Fin Market Dev	-0.019* [-1.85]	-0.204*** [-2.68]	-0.022** [-2.13]	-0.283*** [-3.23]
Fin Dep	0.040* [1.82]	-0.034 [-0.22]		
Firm Controls	Yes	Yes	Yes	Yes
E&S*Country Controls	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes
N	33,018	33,018	32,082	32,082
adj. R-sq	31.9%	19.7%	81.6%	57.1%

Panel B. Equity vs Credit Market Development				
	1	2	3	4
	Tobin's Q_{t+1}	ROA$_{t+1}$	Tobin's Q_{t+1}	ROA$_{t+1}$
Fin Dep*E&S*Equity	0.037*	0.516***	0.041**	0.378***
	[1.82]	[3.54]	[2.17]	[3.03]
E&S*Equity	0.575***	3.791***	0.341***	1.092
	[4.42]	[3.96]	[3.01]	[1.13]
Fin Dep*E&S*Credit	0.028	0.409**	0.03	0.156
	[0.95]	[1.98]	[0.94]	[0.61]
E&S*Credit	-0.059	0.084	0.142	0.493
	[-0.28]	[0.06]	[0.75]	[0.26]
Fin Dep*E&S	-0.078**	-0.374	-0.134***	-0.538**
	[-2.28]	[-1.47]	[-3.24]	[-2.25]
Fin Dep*Equity	-0.014	-0.233***	-0.030**	-0.342***
	[-1.29]	[-2.80]	[-2.54]	[-3.39]
Fin Dep*Credit	-0.025	-0.156	0.014	-0.069
	[-1.49]	[-1.30]	[0.64]	[-0.33]
Fin Dep	0.038*	-0.031		
	[1.73]	[-0.20]		
Firm Controls	Yes	Yes	Yes	Yes
E&S*Country Controls	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes
N	33,018	33,018	32,082	32,082
adj. R-sq	32.0%	19.7%	81.6%	57.1%

Table 6. Channels

This table presents the results of estimating Equation (2), augmented with two triple interaction terms between proxies for market efficiency (columns 1 and 2) or investor protection (columns 3 and 4), environmental and social (E&S) performance, and proxies for equity and credit market development. Market Efficiency is an indicator variable that takes the value of one for countries with informationally efficient equity markets, and zero otherwise (Fang and Jacobsen, 2024). Investor Protection is an indicator variable that takes the value of one for countries where the Anti-Director Rights Index (ADRI) has a value of three or more, and zero otherwise (Djankov et al., 2008). In columns (1) and (3), the dependent variable is Tobin's Q measured at time $t+1$, while columns (2) and (4) use Return on Assets (ROA) at time $t+1$. All specifications include firm-level controls, interactions between E&S and the set of country-level characteristics, and industry-year and country-year fixed effects. The standard errors used to compute t -statistics (reported in brackets) are robust to heteroskedasticity and clustering at the firm level. Coefficient estimates significantly different from zero at the 10%, 5%, and 1% level are identified with *, **, and ***, respectively.

	1	2	3	4
	Tobin's Q_{t+1}	ROA $_{t+1}$	Tobin's Q_{t+1}	ROA $_{t+1}$
Market Efficiency*				
E&S*Equity	1.804***	8.433***		
	[3.59]	[2.82]		
Investor Protection*				
E&S*Equity			1.256**	8.338*
			[2.02]	[1.81]
E&S*Equity	-1.111**	-4.569	-0.661	-5.289
	[-2.26]	[-1.61]	[-1.09]	[-1.17]
Market Efficiency*				
E&S*Credit	0.346	2.116		
	[0.80]	[0.59]		
Investor Protection*				
E&S*Credit			0.729	-1.513
			[1.47]	[-0.49]
E&S*Credit	-0.379	-3.092	-0.737*	0.149
	[-0.96]	[-1.05]	[-1.66]	[0.05]
Market Efficiency*				
E&S	-1.740***	-7.229***		
	[-4.46]	[-2.58]		
Investor Protection*				
E&S			-1.451***	-3.556
			[-3.33]	[-1.14]
Firm Controls	Yes	Yes	Yes	Yes
E&S*Country Controls	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes
N	32,606	32,606	33,018	33,018
adj. R-sq	31.9%	19.3%	32.0%	19.2%

Table 7. Channels - Robustness Tests

This table presents robustness tests of the “discipline imposing” and “managerial learning” channels. We estimate the models of Table 5, Panel B in subsamples separated based on either the level of market efficiency (columns 1 – 4) or the level of investor protection (columns 5 – 8). Market Efficiency is an indicator variable that takes the value of one for countries with informationally efficient equity markets (the High Market Efficiency subsample), and zero otherwise (the Low Market Efficiency subsample) based on Fang and Jacobsen (2024). Investor Protection is an indicator variable that takes the value of one (the High Investor Protection subsample) for countries where the Anti-Director Rights Index (ADRI) has a value of three or more, and zero otherwise (the Low Investor Protection subsample) based on Djankov et al., (2008). The model tests whether the effect of financial market development on the E&S–firm value relation is more pronounced for firms in industries that are more dependent on external finance. In columns (1), (3), (5), and (7), the dependent variable is Tobin’s Q measured at time t+1, while columns (2), (4), (6), and (8) use Return on Assets (ROA) at time t+1. All specifications include firm-level controls, interactions between E&S and country-level characteristics, and firm, industry-year and country-year fixed effects. The standard errors used to compute *t*-statistics (reported in brackets) are robust to heteroskedasticity and clustering at the firm level. Coefficient estimates significantly different from zero at the 10%, 5%, and 1% level are identified with *, **, and ***, respectively.

	Low Market Efficiency		High Market Efficiency		Low Investor Protection		High Investor Protection	
	1	2	3	4	5	6	7	8
	Tobin's Q _{t+1}	ROA _{t+1}	Tobin's Q _{t+1}	ROA _{t+1}	Tobin's Q _{t+1}	ROA _{t+1}	Tobin's Q _{t+1}	ROA _{t+1}
Fin Dep*E&S*Equity	0.002	-0.149	0.050**	0.384***	-0.054	-0.904	0.041**	0.353***
	[0.05]	[-0.42]	[2.32]	[2.71]	[-0.62]	[-0.87]	[2.08]	[2.67]
E&S*Equity	0.541*	0.637	0.364***	1.467	-0.297	-6.109	0.354***	1.581
	[1.75]	[0.22]	[2.80]	[1.28]	[-0.55]	[-1.16]	[2.91]	[1.52]
Fin Dep*E&S*Credit	0.040	-0.204	0.033	0.350	0.091	0.563	0.025	0.269
	[0.86]	[-0.70]	[0.92]	[1.14]	[0.93]	[0.87]	[0.75]	[0.96]
E&S*Credit	-0.857*	-2.303	0.370	3.403	0.186	0.132	0.259	1.458
	[-1.72]	[-0.65]	[1.13]	[1.12]	[0.26]	[0.03]	[1.20]	[0.64]
Fin Dep*E&S	-0.055	0.287	-0.150***	-0.636**	-0.089	-0.655	-0.128***	-0.556**
	[-0.93]	[0.83]	[-2.74]	[-2.13]	[-0.78]	[-1.05]	[-2.86]	[-2.18]
Fin Dep*Equity	0.000	-0.012	-0.038***	-0.382***	0.033	0.250	-0.030**	-0.330***
	[0.01]	[-0.06]	[-2.66]	[-3.22]	[0.70]	[0.27]	[-2.32]	[-3.10]
Fin Dep*Credit	-0.070*	-0.478	0.019	-0.170	-0.116**	-1.183**	0.019	-0.167
	[-1.84]	[-1.64]	[0.77]	[-0.70]	[-2.30]	[-2.14]	[0.84]	[-0.74]

Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
E&S*Country Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4,924	4,924	26,577	26,577	3,211	3,211	28,684	28,684
adj. R-sq	86.8%	54.3%	80.7%	57.9%	88.7%	53.8%	80.8%	57.6%
