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The Effect of Social CSR on Labor Investment Decisions: Theory and International Evidence

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ABSTRACT

This study analyzes how the social aspects of corporate social responsibility (CSR) influence firms' labor investment decisions. We provide new evidence using an international sample of 612 companies in 30 countries from 2012 to 2019; we use the generalized method of moments for our estimations. Our empirical analysis shows that increasing social CSR leads to labor overinvestment but reduces labor underinvestment. Our results also demonstrate that employment protection legislation limits the effects of social CSR on labor underinvestment. In conclusion, this study disentangles the relationship between social CSR and labor investment decisions. Finally, we discuss some relevant practical implications for managers and shareholders as we reveal the effect of social CSR on labor investment decisions and suggest a substitution effect between social CSR efforts and employment protection legislation.

1 | Introduction

Talent retention has been reflected at multiple levels of the economy, and regardless of the economic cycle, labor investment strategies have been closely observed by both mainstream media and academics. For instance, in 2022, mainstream media concerned itself with job quitting rates (Gittleman 2022), talent wars (The Economist 2022), job migration (Wise, Varvitsioti, and Kazmin 2022), and the Great Resignation. In a more recent economically unstable period, mainstream media focused on companies' capability to absorb talent (The Economist 2024) and compensation cuts (Kinder 2024).

From an academic perspective, there is growing interest in the effects of corporate social responsibility (CSR) on labor performance. Chaudhary (2017) highlighted that CSR efforts can inspire employees and positively influence their employment decisions. More recent studies have expanded on this topic. Lu et al. (2020) showed that CSR initiatives increase employee engagement and organizational commitment, and Raza et al. (2021) suggested that CSR efforts can boost employees' organizational pride. Chatzopoulou, Manolopoulos, and Agapitou (2022) further showed that job satisfaction related to CSR efforts can enhance performance, while Kocollari, Cavicchioli, and Demaria (2024) emphasized the significance of employee-centric CSR in enhancing labor satisfaction. Moreover, Kim et al. (2024) revealed that a positive company image and a perceived safe workplace can reduce employee burnout. Their study also highlighted how employment protection legislation (EPL) has a substitutive effect on CSR. Consequently, building on these findings, as well as Palmeira, Pindado, and Requejo (2023), who studied the impact of EPL on labor investment inefficiencies, we investigate whether voluntary efforts to generate a safe workplace perception affect labor investment inefficiencies as much as mandatory efforts created by EPL.

In recent decades, investing in CSR has become more than just a trend. The value added by CSR is reflected in the tendency to characterize companies based on their non-financial information. Consequently, accredited institutions such as Bloomberg and Reuters have provided relatively more recent rating systems to measure companies' efforts to be more socially responsible. CSR is also supported by the shareholder theory, which has evolved from Levitt's (1958) view of the "dangers of social responsibility" to the views of Adhikari (2016) and Kuo, Lin, and Chien (2021) on investment in CSR as a mechanism to achieve companies' economic objectives. From this perspective, previous studies document that CSR-intensive companies have a lower cost of capital (Dhaliwal et al. 2011) and better access to credit (Cheng, Ioannou, and Serafeim 2014), resulting in less financial distress (Pucheta-Martinez, Bel-Oms, and Gallego-Álvarez 2023), better financial performance (Fourati and Dammak 2021; Van Beurden and Gössling 2008), and possible relation to investment inefficiency (Gupta and Das 2024). However, as far as we know, no studies analyze the impact of social CSR efforts on labor investment efficiency. This dearth of research motivates our study. We argue that if managers and shareholders are informed of the effects of CSR, they can improve their labor investment decisions.

This study investigates how social CSR efforts affect labor investment efficiency. On the one hand, improved financial performance, reputation, image, and employee engagement from adopting social CSR practices can lead to higher investment in labor. On the other hand, managers can take advantage of the benefits derived from social CSR to improve their image as good employers by overinvesting in labor, which is perceived as a moral hazard problem.

We gathered an international sample of 612 companies in 30 countries from 2012 to 2019 (4044 firm-year observations). We used the generalized method of the moments system to estimate the direct impact of social CSR practices on labor investment efficiency and to disentangle how EPL moderates this effect. Our analysis considers the multidimensional construct described by Carroll (1979) and further developed by Alvarado-Herrera et al. (2017) and Currás-Pérez et al. (2018), among others, which subdivides CSR into social, environmental, and economic efforts. Specifically, we focus on the social dimension of CSR, which is related to the workforce and community and, consequently, more connected to labor investment.

EPL is considered an external factor that moderates the effect of CSR on labor investment efficiency. It is particularly relevant for at least two reasons. First, EPL is usually related to the social dimension of CSR, including employee bargaining power (Simintzi, Vig, and Volpin 2015). Second, EPL can substitute some elements of social CSR by increasing the perception of a safe workplace, employment stability (Kim et al. 2024; Mory, Wirtz, and Göttel 2016; Schaefer et al. 2024), and, more directly, employment-related aspects of social CSR such as cash-profit sharing, employee health and safety, and employee relations, as described by Tian, King, and Smith (2023).

Despite the positive social effects, EPL is a source of operational risk once it is regarded as regulations that increase hiring and firing costs (Dewaelheyns, Van Hulle, and Van Landuyt 2019). According to some research (e.g., Bravo-Biosca, Criscuolo, and Menon 2016; Fairhurst, Liu, and Ni 2020; Simintzi, Vig, and Volpin 2015), this regulatory burden can reduce output, increase financial constraint risks, and minimize resource reallocation capability. From this point of view, it is interesting to explore how this source of external risk affects labor investment decisions by inducing labor investment inefficiencies.

This study contributes to the increasing literature on CSR efforts and labor. Although such research is usually related to turnover and employee engagement (e.g., Chatzopoulou, Manolopoulos, and Agapitou 2022; Chaudhary 2017; Kim et al. 2017, 2024; Lu et al. 2020), we extend the literature by explaining the labor investment decision-making and the deviation from a level justified by a company's fundaments. This contribution allows researchers to include financial performance and investment efficiency as relevant aspects of social CSR efforts. We confirm that the social aspect of CSR is relevant to labor investment as it increases the perception of a safe workplace. We also find that increasing social CSR is moderated by EPL, which has a substitution effect on it.

We also contribute to the literature that relates labor investment efficiency to different investment aspects of the company. Specifically, we extend the growing literature on labor investment efficiency (e.g., Ben-Nasr and Alshwer 2016; Jung, Lee, and Weber 2014; Palmeira, Pindado, and Requejo 2023; Simintzi, Vig, and Volpin 2015) and observe how changes in social CSR can control or motivate labor over- and underinvestment in an international framework. Examining labor investment within an international framework provides an opportunity to compare how macroeconomic factors, such as EPL, affect the increasingly important decision to invest in social CSR. To our knowledge, this study is the first to observe this relationship.

Finally, we link the impact of CSR on labor investment inefficiencies to agency theory and risk perception, thereby extending the research of Adhikari (2016), Chintrakarn, Jiraporn, and Treepongkaruna (2021), Kuo, Lin, and Chien (2021), and Pucheta-Martinez, Bel-Oms, and Gallego-Álvarez (2023), among others. Our study creates a theoretical model that explains the relationship between the motivation to invest in CSR and its effects on labor investment.

The remainder of the paper is structured as follows: Section 2 outlines the theoretical framework and presents our hypotheses. Section 3 details the data, research methods, and analytical model. Section 4 describes the main results, and Section 5 provides additional tests. In Section 6, we discuss the empirical evidence. Section 7 addresses the theoretical, practical, and policy implications and points out the limitations and future studies. Finally, Section 8 highlights our main conclusions.

2 | Theory and Hypotheses Development

There is an undeniable trend in companies to pay attention to both financial and social indicators. For instance, Hanjani and

Kusumadewi (2023) showed that companies must pay attention to their environmental impact while continuously improving their financial performance.

The theoretical foundations start with the stakeholder theory (Ullman 1985). Accordingly, the argument for investing in CSR is that a company can only exist with the support of its stakeholders. From a shareholder perspective, Adhikari (2016) and Kuo, Lin, and Chien (2021) claim that investing in CSR can be a mechanism for companies to achieve their financial goals. The argument for such a mechanism is that CSR activities increase employee engagement, organizational commitment, and job satisfaction (Lu et al. 2020), which yields better organizational results. Using a more direct approach, Pucheta-Martinez, Bel-Oms, and Gallego-Álvarez (2023) showed that investing in CSR boosts a company's competitive advantage and presents clear benefits from the perspective of shareholder theory. Focusing on labor, Tian, King, and Smith (2023) highlighted the relationship between efforts in some employment-related subcategories of the social dimension of CSR and increased organizational status, leading to better and cheaper talent recruitment and retention.

2.1 | Labor Investment Inefficiencies and CSR

Many authors define labor investment inefficiency as those investments in labor that are not justified by economic fundamentals (e.g., Ben-Nasr and Alshwer 2016; Cao and Rees 2020; Jung, Lee, and Weber 2014; Taylor et al. 2019). The lack of labor investment inefficiencies (i.e., labor investment efficiency) is considered a reflection of the company's organizational capability, efficient investment, and resource management (Taylor et al. 2019). Biddle, Hilary, and Verdi (2009) argue that higher investment inefficiency increases information asymmetry between firms and suppliers of capital.

The two categories of labor investment inefficiencies are over- and underinvestment. Jung, Lee, and Weber (2014) showed that the agency cost of asymmetric information between managers and shareholders is crucial to labor investment inefficiencies. In an earlier study, Pagano and Volpin (2005) demonstrated that managers have a personal interest in developing generous employment policies, which can serve as an anti-takeover defense mechanism by restraining the ability to renegotiate wages or downsize the workforce. Similarly, Ben-Nasr and Alshwer (2016) related the manager's desire to avoid conflicts and to adopt empire-building behavior to labor overinvestment. In addition, Ghaly, Dang, and Stathopoulos (2020) argued that overinvestment is driven by agency conflicts and managers' personal interests in overhiring or retaining poorly performing employees.

Therefore, to better understand labor investment inefficiency, we examine the effect of CSR efforts on firms' labor investment behaviors. We consider the multidimensionality of CSR, as first proposed by Carroll (1979), who examined the relationship between the company and other stakeholders through legal, economic, ethical, and discretionary responsibilities. More recently, Currás-Pérez et al. (2018), following Alvarado-Herrera et al.'s (2017) multidimensionality paradigm of CSR, subdivided CSR into social, environmental, and economic categories. Both studies find that the perception and effects of CSR depend on stakeholders' sensitivity to each dimension.

Figure 1 provides the theoretical and conceptual framework for this study. In this framework, we focus our efforts on the social dimension of CSR because this dimension considers the employer–employee relationship, manager responsibility, and other aspects described by Tian, King, and Smith (2023) as employment-related CSR. Social CSR also includes efforts to improve the company's relationship with its community, which enhances aspects of employment-related CSR, such as organizational status (Bidwell et al. 2015; Tian, King, and Smith 2023). Furthermore, Kocollari, Cavicchioli, and Demaria (2024) highlighted five CSR elements that impact the employer–employee relationship (equity, envisioning, empowerment, experimentation, and empathy). Thus, by focusing on the social aspect of CSR, we can observe the direct effect of CSR efforts on labor relations.

2.2 | Primary Motivations for CSR Engagement

Apart from the potential advantages of investing in CSR, whether CSR limits or exacerbates agency problems remains an open question. Adhikari (2016) suggested two primary motivations for CSR engagement, which we call the *economic performance motivation*. First, CSR increases firms' value through customer loyalty and increased reputation. In this vein, Kuo, Lin, and Chien (2021) found that CSR practices adopted to meet stakeholders' expectations can constrain earnings management through discretionary accruals, provide more transparent financial information, and consequently increasing financial performance.

Second, managers may be motivated to implement CSR practices to achieve their interests. In this sense, Di Giuli and Kostovetsky (2014) found that CSR investment depends on the political affinity of the manager and the political trend in the company's region. In addition, Kuo, Lin, and Chien (2021) and Di Giuli and Kostovetsky (2014) could not find any relationship between CSR investment and sales. Furthermore, they related CSR investment to decreased return on assets and negative future stock returns.

Consequently, we argue that such dichotomous reasons for engaging in CSR activities may lead to labor investment inefficiencies (either labor over- or underinvestment). All the possible combinations are outcomes of the following three approaches that explain the different investment inefficiencies.

2.3 | CSR Investment Approaches

We consider three CSR investment approaches, as shown in Figure 1. The first approach to CSR investments is based on financial performance. This approach argues that companies focus on the economic benefits of investing in CSR. As a result, they are likely to increase labor investment efficiency (reducing both over- and underinvestment) to boost their financial performance. This approach is in line with Fourati and Dammak (2021) and Van Beurden and Gössling (2008), who

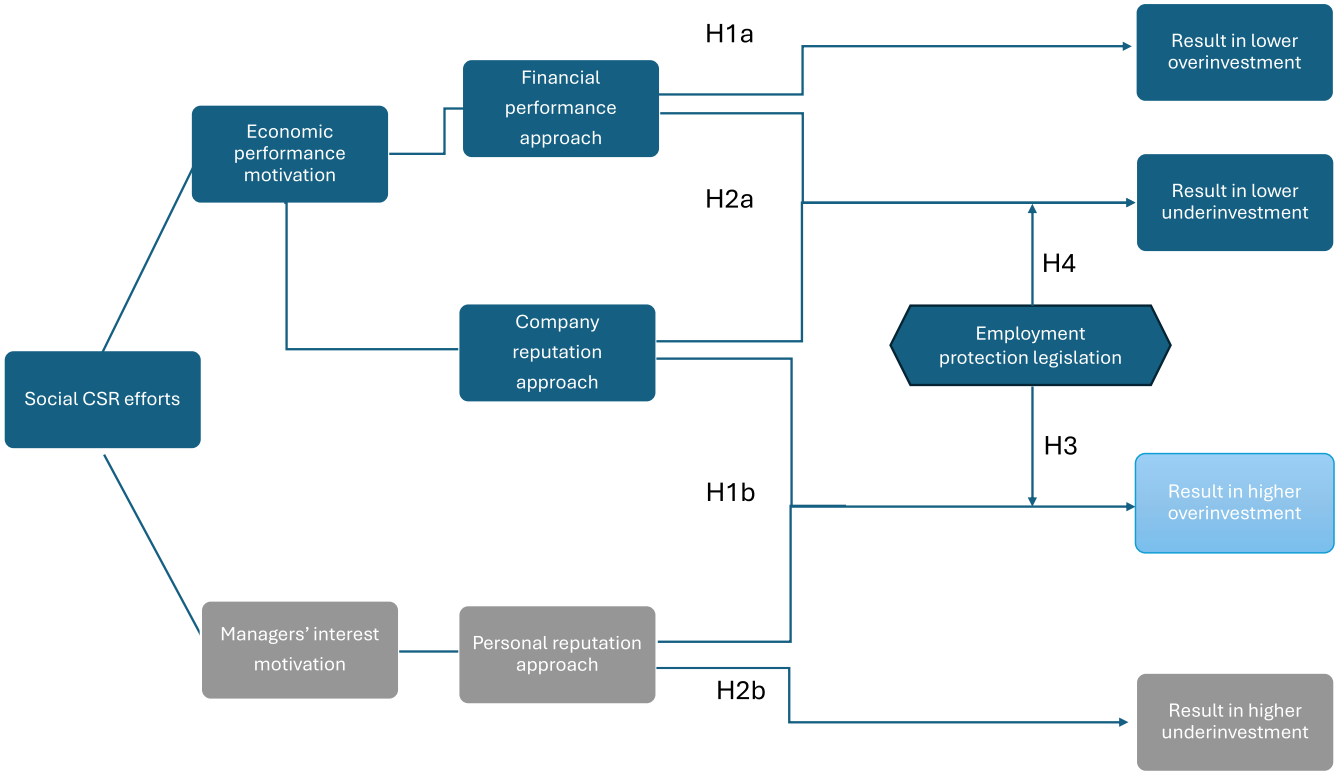

FIGURE 1 | Theoretical and conceptual model.

found that companies that engage in CSR activities are commonly reported to have better financial performance.

The second approach is related to the company's reputation. That is, a company may invest in CSR to improve its reputation, as highlighted by Chatzopoulou, Manolopoulos, and Agapitou (2022), Onkila and Sarna (2022), Raza et al. (2021), and Semenova (2023), which, consequently, improves economic performance. This approach suggests that the company, focusing on improving its reputation through social CSR efforts, may overinvest in labor to protect its improved reputation.

The third approach is linked to personal reputation. A manager may engage in CSR activities to improve their personal reputation. This argument is in line with Kuo, Lin, and Chien (2021), who claimed that the positive effects of CSR can only be perceived when the efforts to implement CSR reflect stakeholders' expectations. According to this approach, managers may overinvest to pursue a better personal reputation, and shareholders would most likely discount the agency costs, leading to underinvestment.

2.4 | Social CSR Efforts and Labor Overinvestment

Our analysis of the previously discussed approaches leads us to two different outcomes. On the one hand, investing in CSR may reduce the available cash and motivate companies to invest more efficiently in labor. Furthermore, efforts in the social dimension of CSR can directly affect the employer–employee relationship, favoring talent retention (e.g., Chatzopoulou, Manolopoulos, and Agapitou 2022; Chaudhary 2017; Kim et al. 2017; Kim et al. 2024) and reducing turnover (Cao and Rees 2020; Chaudhary 2017; Chatzopoulou, Manolopoulos, and Agapitou 2022). Such improvements in the working environment should facilitate more efficient labor investment and, consequently, lower overinvestment.

On the other hand, CSR investment and related factors, such as improved access to capital and lower financial constraints, may increase overinvestment in labor. Managers who desire to sustain the results of social CSR efforts that improve their personal image may engage in labor overinvestment.

Given this discussion, the theoretical arguments suggest that social CSR can increase or decrease overinvestment in labor. Consequently, our first hypothesis captures these two alternatives and is formulated as follows (Figure 1):

H1a. *Social CSR efforts decrease labor overinvestment.*

H1b. *Social CSR efforts increase labor overinvestment.*

2.5 | Social CSR Efforts and Labor Underinvestment

Although overinvestment is usually related to managers' interests, the motivation for underinvestment is more closely related to the ability to finance labor. Ben-Nasr and Alshwer (2016) argued that labor underinvestment is the investors' response to asymmetric information. In addition, Ghaly, Dang, and Stathopoulos (2020) found that underinvestment is mainly caused by pressure from

external investors to overfire underperforming employees or to reduce hiring rates to meet earnings targets.

The main practical explanation for such underinvestment is that investors discount the asymmetric information costs from the price of securities, turning otherwise profitable labor investment into a prohibitive endeavor. According to Gupta and Das (2024), signaling theory can explain the relationship between CSR and investment efficiency. In this context, CSR tends to produce more inefficiency (underinvestment) until the company reaches a CSR threshold that effectively signals its benefits and perceived value. This underinvestment occurs in the form of underhiring, when the company does not hire the expected number of employees, and overfiring, when staff downsizing exceeds what is justified by the company's fundamentals.

Adhikari (2016) noted that increased company value due to customer loyalty is a primary driver for adopting CSR practices. In addition, Kuo, Lin, and Chien (2021) argued that CSR functions as a hedging strategy against damaging events, resulting in improved company value. This improvement in financial performance can also safeguard against changes in employment protection policies. Specifically, we focus on the employee treatment aspect of CSR, as outlined by Cao and Rees (2020), suggesting that shareholders may view social CSR efforts as a way to achieve economic objectives. Therefore, social CSR activities closely related to labor investment decisions, talent retention, and turnover may signal better outcomes to shareholders by reducing underinvestment, whether the company aims to improve its financial performance or enhance its image and reputation.

However, as Kuo, Lin, and Chien (2021) pointed out, the positive effects of CSR are only recognized when these efforts align with stakeholders' expectations. Consequently, when social CSR initiatives are redundant or fail to meet these expectations, shareholders may interpret them as a means for managers to enhance their personal reputation, thus increasing underinvestment. Based on these insights, we propose the hypothesis that social CSR efforts increase labor underinvestment. Consequently, we set our second hypothesis as two possible outcomes (Figure 1):

H2a. *Social CSR efforts reduce labor underinvestment.*

H2b. *Social CSR efforts increase labor underinvestment.*

2.6 | Employment Protection as a Substitute for CSR Efforts

Up to this point, we have assumed that labor investment adjustments can occur without friction, disregarding the financial and operational risks associated with hiring and firing personnel. To better understand the impact of social-related CSR investment on labor investment inefficiencies, we now consider the role of an external factor, namely, EPL, which is defined as a set of rules that adds costs to hiring and firing personnel (Dewaelheyns, Van Hulle, and Van Landuyt 2019).

Arestis, Ferreiro, and Gómez (2020) argued that stringent EPL can lead to unemployment and labor segmentation. Roy (2021) added that EPL increases reliance on labor-intensive imports and reduces the competitiveness of local labor. In addition, Cingano et al. (2010) found that companies may shift toward capital-intensive production methods and suggested that access to credit can mitigate the effects of EPL. Schaefer et al. (2024) suggested that CSR initiatives, by fostering organizational pride and increasing employees' trust in management, improve emotional well-being and create a perception of a safer workplace. Finally, Kim et al. (2024) proposed a substitutive relationship between CSR efforts and EPL.

It is important to note that EPL increases the financial costs of labor overinvestment. Unlike voluntary social CSR investments, EPL costs are mandatory, and both contribute to the perception of a safe workplace. Therefore, EPL may substitute social CSR by limiting the reputational gains from CSR initiatives, thereby weakening the impact of social CSR on overinvestment.

From a social perspective, EPL increases the costs of human capital reallocation by discouraging companies from using downsizing as a cost-saving strategy (Dewaelheyns, Van Hulle, and Van Landuyt 2019). This legislation also strengthens employees' bargaining power to set salaries during hiring processes (Doellgast, Bidwell, and Colvin 2021; Pagano and Volpin 2005; Simintzi, Vig, and Volpin 2015), mitigating labor overinvestment. Furthermore, as Chen, Hansen, and Cai (2023) highlighted in their definition of internal CSR, EPL safeguards employees' rights and can substitute for social CSR by rendering company-led initiatives aimed at creating a safer workplace redundant. Therefore, we posit that EPL prevents managers from overinvesting in labor to enhance their personal reputation, further weakening the effect of social CSR on overinvestment (Figure 1):

H3. *Employment protection legislation mitigates the positive effect of social CSR on labor overinvestment.*

Despite managers' perceptions, EPL undeniably increases operational risk by raising the costs of hiring and firing and reducing a firm's financial flexibility. Ben-Nasr and Alshwer (2016) stated that labor underinvestment is mainly caused by investors discounting asymmetric information costs from the price of securities, turning otherwise profitable labor investment into a prohibitive endeavor. Ghaly, Dang, and Stathopoulos (2020) showed that underinvestment is frequently driven by shareholder pressure to reduce the workforce to meet earnings targets.

Since EPL raises the costs of firing, it reduces direct shareholder pressure to downsize the workforce as layoffs become more expensive. These pressures are likely to shift to other aspects of the business. For instance, in the context of stringent EPL, social CSR investments may be seen as redundant by shareholders. Moreover, EPL can influence the impact of internal CSR, as previously discussed. Prasad et al. (2022) argued that mandatory CSR signals a loss of discretionary power over CSR spending, leading to a substitutive effect between mandatory EPL and voluntary CSR. Therefore, from the financial performance approach, the higher the employment protection is, the lower the positive effect of social CSR on lessening labor underinvestment.

As a result, the increased costs of firing, along with the substitutive effect of EPL on voluntary CSR, diminish the positive impact of

social CSR on a company's reputation. The higher costs of adjusting staff levels, as well as the substitution effects, could also lessen the influence of social CSR in reducing underinvestment. The previous arguments lead us to set the following hypothesis (Figure 1):

H4. *Employment protection legislation mitigates the negative effect of social CSR on underinvestment.*

2.7 | Theoretical Framework

The study is grounded in agency and signaling theories. Our conceptual model, as depicted in Figure 1, analyzes the impact of social CSR efforts on labor investment inefficiencies—namely, over- and underinvestment (Jung, Lee, and Weber 2014). Therefore, the dependent variables in our model are the labor investment inefficiencies that can be mainly explained by social CSR efforts. In addition, EPL plays a moderating role, as shown in Figure 2.

In sum, our conceptual model (Figure 2) proposes that social CSR efforts may lead to either lower or higher overinvestment (H1). Conversely, our model also shows that social CSR efforts can also result in lower underinvestment and, in some cases, higher underinvestment (H2). Our conceptual model also considers the moderating role of external factors—namely, EPL. Specifically, EPL reduces both the positive impact of social CSR on labor overinvestment (H3) and the negative impact on underinvestment (H4).

3 | Data and Methodology

3.1 | Research Design

The research design of this study is quantitative. We examine how social CSR efforts affect labor investment decisions. Specifically, we explore the impact of social CSR on labor investment inefficiencies and how changes in employment protection can moderate this relationship. To this end, we use the social CSR measurement from the Refinitiv Eikon database and estimate labor investment inefficiencies as the deviation from predicted labor investment following Jung, Lee, and Weber (2014). We also incorporate the OECD Employment Protection Index, version 3. The estimations have been conducted using panel data methods. More specifically, we use the system of the general method of moments estimator for all the models, except when we predict the values of the dependent variable, where the ordinary least square (OLS) method is a more suitable method.

3.2 | Data Collection Method

We collected data from the Refinitiv Eikon database to create a sample of 612 listed companies from 2012 to 2019, resulting in 4044 firm-year observations from 30 countries. The choice of period avoids possible noises caused by different lockdown policies and employment effects during the first year of the COVID-19 pandemic (Köhler et al. 2023).

The sample excludes companies operating in the financial and real estate sectors, firms with less than 10 full-time (or equivalent) employees, and companies that reported less than 10,000 euros of total assets. We also remove all companies from countries without EPL data from the OECD. Consequently, we merge the firm-level data from Refinitiv Eikon with the country-level OECD indicators on EPL. As a result, we obtain 31,548 firm-year observations. After removing all the observations with missing values for any of our variables, we obtain 12,244 observations. We then estimate our dependent variables (labor investment inefficiency) and remove observations missing a value for a variable, leading to a sample of 7899 firm-year observations. Finally, we exclude all the companies with less than six consecutive years of data. Note that we need at least four consecutive observations per company to test for the lack of second-order serial correlation in our main regression

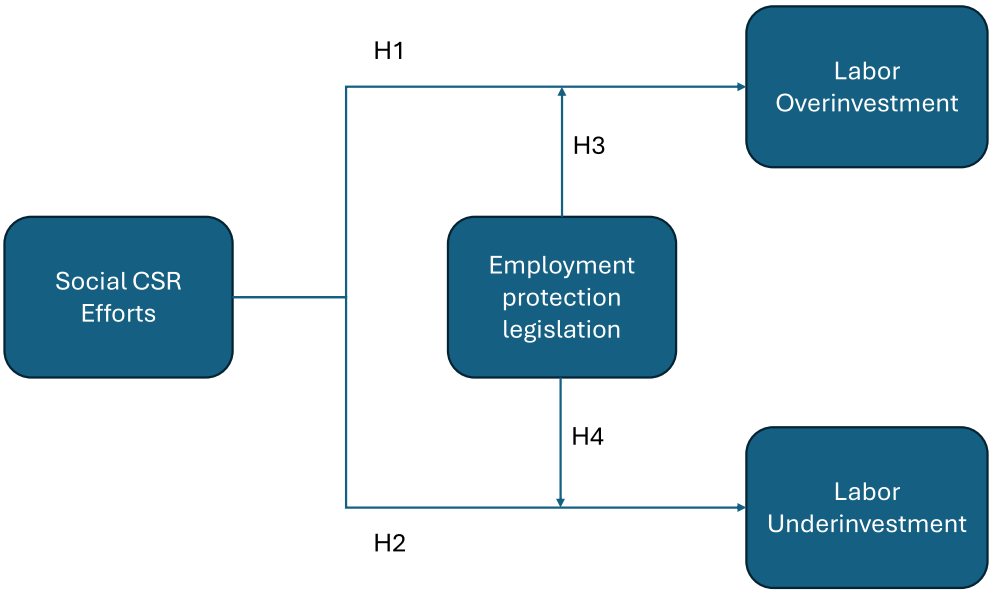

FIGURE 2 | Theoretical framework.

analyses, one time period to build the growth variables, and another since the model is dynamic order 1. Table 1 summarizes the sample selection process.

TABLE 1 | Sample selection process.

Stage of the sample selection process	Observations
1. After merging the firm-level data from Refinitiv Eikon with the country-level OECD indicators on employment protection legislation	31,548
2. After removing all the observations with missing values in any of the variables involved in our analysis	12,244
3. After estimating and excluding observations without labor investment inefficiency variable	7899
4. After excluding firms with less than six consecutive years of observations	4044

Note: The sample selection process, taking into account that excludes all companies operating in the financial and real estate sectors and also excludes the companies with less than 10 full-time (or equivalent) employees and companies that reported less than 10,000 euros of total assets.

Table 2 provides the summary statistics of the final sample. Note that all figures are computed with the 4044 firm-year observations after removing the observation, as shown in Table 1. All variables are described in Appendix A.

3.3 | Estimation Method

As other models in the previous labor investment efficiency literature (e.g., Ben-Nasr and Alshwer 2016; Ghaly, Dang, and Stathopoulos 2020; Jung, Lee, and Weber 2014; Khedmati, Sualihu, and Yawson 2020; Taylor et al. 2019; Palmeira, Pindado, and Requejo 2023), our model could suffer from the unobserved heterogeneity and endogeneity problems. Consequently, we address both problems by using the generalized method of moments (GMM).

We use the system GMM estimator derived from Blundell and Bond (1998) to test the correct specifications for all explanatory models in our study. Specifically, we rely on several tests to check for the correct specification of each model. First, we use the Hansen *J* statistic of overidentifying restrictions (Hansen 1982) to test for the absence of correlation between the instruments and the random disturbance. Second, we use the m_2 statistic (Arellano and Bond 1991) to test for the lack of second-order serial correlation in the first-difference residual.

TABLE 2 | Summary statistics.

Variable	Obs.	Mean	SD	Min.	Max.
SCSR	4044	0.3280	0.3372	0.0000	0.9819
EPL	4044	2.1532	0.6841	0.9588	3.5138
LNEMP	4044	8.9570	1.6168	2.7726	13.2988
IALI	4044	0.0562	0.1298	−0.6010	2.0448
MTB	4044	1.3176	1.1896	0.0550	12.8425
LEV	4044	0.2410	0.1505	0.0000	0.8387
TSALES	4044	8.0245	21.0279	0.0235	354.0646
ΔPROFIT	4044	0.0375	1.0716	−9.9208	9.0056
VALUE	4044	10.5458	25.1584	0.0167	254.6648
ROE	4044	0.1691	0.1242	−0.6715	0.9668
CTC	4044	1.6631	0.9957	0.1991	17.7869
LOSS	4044	0.0475	0.2127	0.0000	1.0000
LNSALES	4044	0.7604	1.6256	−3.7492	5.8695
NPPE	4044	0.0797	0.2881	−0.0382	3.8254
INTENSE	4044	0.0048	0.0064	0.0000	0.0853
DIVP	4044	0.9869	0.1137	0.0000	1.0000
SIZE	4044	14.7813	1.7599	10.0236	20.0142
CFV	4044	0.0288	0.0707	0.0001	0.7666
SALV	4044	1.3691	3.9658	0.0021	52.9727
LIV	4044	0.1112	0.1216	0.0057	1.3800

Note: This table displays the summary statistics of all the variables used in the research process.

Finally, we use Wald tests to check for the joint significance of the reported coefficients and time, industry, and country dummy variables.

3.4 | Labor Investment Model Estimation

We based the estimation of labor investment inefficiencies on Pinnuck and Lillis's (2007) labor investment model. Following previous works (e.g., Ben-Nasr and Alshwer 2016; Ghaly, Dang, and Stathopoulos 2020; Jung, Lee, and Weber 2014; Khedmati, Sualihu, and Yawson 2020), we assess labor investment inefficiencies and identify the labor over- and underinvestment processes. The dependent variable is the growth of the total number of employees (NHIRE). The independent variables of this model are the proportional sales variation between two consecutive periods (ΔSALES), the proportional profit variation between two consecutive periods (ΔPROFIT), the return on assets (ROA), the return on equity (ROE), the company's market value (VALUE), the ratio between current assets to current liabilities (CTC) and its variation (ΔCTC), book leverage (LEV), and a series of dummies that takes the value of 1 to capture small losses (LossBin). We adapt the model by adding the lagged value of the natural logarithm of the number of employees (LNEMP), reflecting labor as a limited resource. Note that larger companies tend to grow or shrink more slowly than smaller ones because achieving proportional changes in their workforce requires more personnel adjustments. The adapted model also includes the industry average labor investment (IALI), which captures industry labor investment trends. Considering these two new variables, LNEMP and IALI, the model is depicted as follows.

$$\begin{aligned}\text{NHIRE} = \; & \alpha + \beta_1 \text{LNEMP}_{i,t-1} + \beta_2 \text{IALI}_{it} \\ & + \beta_3 \Delta\text{SALES}_{it} + \beta_4 \Delta\text{SALES}_{i,t-1} \\ & + \beta_5 \Delta\text{PROFIT}_{it} + \beta_6 \Delta\text{PROFIT}_{i,t-1} \\ & + \beta_7 \text{ROA}_{it} + \beta_8 \text{ROE}_{it} + \beta_9 \text{VALUE}_{i,t-1} \\ & + \beta_{10} \text{CTC}_{it} + \beta_{11} \Delta\text{CTC}_{it} + \beta_{12} \Delta\text{CTC}_{i,t-1} \\ & + \beta_{13} \text{LEV}_{i,t-1} + \sum_{L=1}^{5} \gamma_L \text{LossBins}^{\text{Onetofive}}{}_{it} \\ & + \eta_i + d_t + \upsilon_{it}\end{aligned} \tag{1}$$

where η_i stands for the individual effect, and d_t is the time effect.

Table 3 shows the results for several models, which include country dummy variables to control for the international nature of our study. Specifically, Columns 1 and 2 displays the results from the previous literature using industry dummy variables and sector dummy variables, respectively. We focus our analysis in Column 3, which provides a better specification thanks to the two new variables (IALI and LNEMP). As we include the industry average labor investment variable, our model only needs sector dummy variables and provides a better specification since we remove the 60 industry dummy variables from the model.

For all models in Table 3, the model specification is correct according to the previously described estimation method (see Subsection 3.3). Specifically, in Column 3, the Hansen *J* statistic

TABLE 3 | Testing labor investment model.

	(1)	(2)	(3)
Variables	**NHIRE**	**NHIRE**	**NHIRE**
$\text{LNEMP}_{i,t-1}$			−0.0364***
			(0.00964)
IALI_{it}			0.709***
			(0.0270)
ΔSALES_{it}	0.253***	0.248***	0.177***
	(0.0125)	(0.0118)	(0.00939)
$\Delta\text{SALES}_{i,t-1}$	0.0845***	0.0775***	0.0508***
	(0.00697)	(0.00630)	(0.00472)
ΔPROFIT_{it}	0.00513***	0.00472***	0.00312***
	(0.00149)	(0.00138)	(0.00120)
$\Delta\text{PROFIT}_{i,t-1}$	0.00459***	0.00459***	0.00303***
	(0.00111)	(0.00107)	(0.000947)
ROA_{it}	−0.267***	−0.171**	−0.283***
	(0.0854)	(0.0795)	(0.0679)
ROE_{it}	0.0523	−0.0267	−0.0104
	(0.0359)	(0.0358)	(0.0298)
$\text{VALUE}_{i,t-1}$	0.000192	0.000316**	0.000363***
	(0.000146)	(0.000135)	(0.000121)
CTC_{it}	−0.00149	−0.000766	−0.000324
	(0.00269)	(0.00248)	(0.00221)
ΔCTC_{it}	0.0150*	0.00985	0.00965
	(0.00772)	(0.00768)	(0.00637)
$\Delta\text{CTC}_{i,t-1}$	−0.0346***	−0.0386***	−0.0289***
	(0.0101)	(0.00958)	(0.00796)
$\text{LEV}_{i,t-1}$	−0.320***	−0.277***	−0.149***
	(0.0576)	(0.0519)	(0.0451)
LossBin1	0.0146	0.00583	0.00896
	(0.0110)	(0.0106)	(0.00919)
LossBin2	−0.00905	−0.00987	−0.0122
	(0.0147)	(0.0139)	(0.0116)
LossBin3	−0.121***	−0.101***	−0.0861***
	(0.0207)	(0.0187)	(0.0154)
LossBin4	−0.0909***	−0.0482**	−0.0220
	(0.0226)	(0.0191)	(0.0175)
LossBin5	−0.249***	−0.207***	−0.189***
	(0.0271)	(0.0213)	(0.0160)
z_1	55.53 (16)	55.92 (16)	158.51 (15)

(Continues)

TABLE 3 | (Continued)

	(1)	(2)	(3)
Variables	**NHIRE**	**NHIRE**	**NHIRE**
z_2	13.14 (7)	13.68 (7)	5.55 (7)
z_3	0.34 (59)	1.85 (9)	2.15 (9)
z_4	0.34 (60)	0.59 (69)	1.19 (69)
m_1	−5.854	−5.852	−5.775
m_2	1.112	1.125	0.945
Hansen	340.769 (301)	349.362 (352)	434.138 (412)

Note: The coefficients (standard deviations) for the variables of the model in Equation (1), estimated by the system-generalized method of moments. The dependent variable is labor investment (NHIRE). The independent variables are controls that are after testing the proper specification of the model. Column (1) includes industry dummy variables, Column (2) includes sector variables, and Column (3) only includes sector dummy variables but enters the model with the industry average labor investment (IALI). Time, country, and industry dummies are included but not reported. z_1, z_2, z_3, and z_4 are Wald tests of the joint significance of all the explanatory variables, time, industry, and country dummy variables, respectively, under the null of no relation, with the degrees of freedom in parentheses. m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as $N(0, 1)$ under the null of no serial correlation. Hansen is a test of the overidentifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term; degrees of freedom are in parentheses. All variables are defined in Appendix A.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.1$.

of overidentifying restrictions is 434.138, which supports the validity of the 412 internal instruments. In addition, the m_2 statistic indicates a lack of second-order serial correlation in the first-difference residual. Finally, the four Wald tests support the joint significance of the reported coefficients, time, industry, and country dummy variables. Furthermore, both new variables have highly significant coefficients: $LNEMP_{i,t-1}$ significantly reduces NHIRE, which can be explained by resource depletion, and IALI captures a herd behavior, given that it increases NHIRE.

3.5 | Labor Investment Inefficiency Measurement

Once we ensure the correct specification of our labor investment model in Equation (2), we predict the labor investment inefficiencies and the labor over- and underinvestment variables using this model. Although the system GMM is used to check for the proper specification of the models, we relied on the OLS estimator at the prediction stage because it allows us to enter the information captured by the individual effect in the yearly cross-sectional predictions of the variables. Table 4, Panel A, reports the summary statistics of the calculated variables by year. The results are very homogenous across years, with a mean value close to zero and similar standard deviations, ranging from 0.11 to 0.16.

The computed variable allows us to disentangle whether labor investment inefficiency is due to an over- or underinvestment problem. On the one hand, if the original labor investment inefficiency variable (LII) has a positive value, the company suffers from labor overinvestment. Hence, the overinvestment variable (OINV) takes the value of the labor investment inefficiency variable when it is positive, and zero otherwise. On the other hand, when the labor investment inefficiency variable has a negative value, the company suffers from underinvestment. Therefore, the underinvestment variable (UINV) takes the absolute value of the labor investment inefficiency variable when it is lower than zero, and zero otherwise. Panel B of Table 4 shows the similarities between the over- and underinvestment measures, with means close to 0.04 and standard deviations around 0.09. We use the predicted variables as the model's dependent variable to test our hypotheses (see Section 2).

It is essential to clarify that each inefficiency is mutually exclusive. In other words, a company that overinvests cannot simultaneously underinvest. Therefore, we adopted a positive value for all inefficiencies and calculated the labor investment inefficiency of the company as the absolute difference between the predicted and observed labor investment levels. Note that labor overinvesting relates to higher-than-expected net hires, while underinvesting relates to lower-than-expected net hires.

3.6 | The Analytical Model and Its Variables

We derive the analytical formula of the conceptual model from Figure 1 to test the four hypotheses arising from our theoretical analysis. Specifically, to test our hypotheses, we derive an explanatory model where each labor investment inefficiency is explained by the first lag of the dependent variable, the level of social CSR, and several control variables. Consequently, the general model proposed is valid for the labor investment estimation and for each type of inefficiency explored (over- and underinvestment). The resulting model is as follows:

$$INEF_{it} = (\beta_1 + \gamma_1 EPL_{it})SCSR_{it} + \beta_2 EPL_{it} + \beta_3 INEF_{i,t-1} + CVS_{i,t-1} + \varepsilon_{it} \quad (2)$$

where EPL_{it} stands for the EPL variable, which plays a moderating role in our model according to our previous arguments, as discussed in Subsection 2.6. This model's dependent variable is the labor investment inefficiencies variable (INEF). It depends on the level of social CSR (SCSR), the main independent variable since it is the core variable in our study, and the previous inefficiency level ($INEF_{i,t-1}$) since the model is dynamic.

The model also enters several control variables ($CVS_{i,t-1}$), including future opportunities, which are proxied by the market-to-book ratio ($MTB_{i,t-1}$), financial capabilities as captured by the leverage ($LEV_{i,t-1}$), liquidity ($CTC_{i,t-1}$), and investment in net property, plant, and equipment ($NPPE_{i,t-1}$). Furthermore, the model also captures other control variables, including LOSS, which is a dummy that takes the value of 1 if the company had negative results, and zero otherwise; labor intensity as the number of employees per asset ($INTENSE_{i,t-1}$); both cash flow and labor investment volatilities (CFV_{it} and LIV_{it}, respectively), and previous sales ($LNSALES_{i,t-1}$). Finally, our model also controls for other abnormal investments as a deviation from expected investment ($ABOINV_{it}$).

TABLE 4 | Summary statistics of predicted variables.

Panel A: Year estimation						
Year	**Variable**	**Obs**	**Mean**	**SD**	**Min**	**Max**
2012	LII	317	−0.0010	0.1587	−0.6493	1.4482
2013	LII	397	0.0021	0.1475	−0.7298	1.1430
2014	LII	498	−0.0017	0.1243	−0.7098	1.1202
2015	LII	612	−0.0037	0.1482	−1.3350	0.9470
2016	LII	612	−0.0003	0.1459	−0.6099	1.9144
2017	LII	572	−0.0064	0.1216	−1.5177	0.6997
2018	LII	536	−0.0028	0.1416	−0.8326	1.9542
2019	LII	500	0.0013	0.1067	−0.3174	0.7806
Panel B: Total estimated variables						
	Variable	**Obs**	**Mean**	**SD**	**Min**	**Max**
	LII	4044	−0.0018	0.1367	−1.5177	1.9542
	OINV	4044	0.0377	0.0949	0.0000	1.9542
	UINV	4044	0.0395	0.0818	0.0000	1.5177

Note: The labor investment inefficiency variable (LII) predicted by year using an ordinary least squares estimator (Panel A) and all year values for LII, as well as the overinvestment variable (OINV) and the underinvestment variable (UINV) (Panel B). These variables are defined in Appendix A.

4 | Results

4.1 | Descriptive Analysis

We conduct a descriptive analysis of the data. We verify the correlation among variables, as presented in Table 5. This analysis shows no problems between variables and a low correlation between over- and underinvestment. The lack of correlation between over- and underinvestment explains the need to consider both over- and underinvestment as independent effects, in line with the previous literature (e.g., Ben-Nasr and Alshwer 2016; Ghaly, Dang, and Stathopoulos 2020; Jung, Lee, and Weber 2014; Khedmati, Sualihu, and Yawson 2020).

We carry out several mean difference tests for all the variables used in the subsequent multivariate analyses to disentangle the differences between companies with high and low efforts in social CSR (Table 6, Panel A). In addition, we checked whether differences exist between companies operating in countries with high versus low employment protection levels (Panel B).

The results from the mean difference tests suggest that companies with high efforts in the social dimension of CSR are significantly related to lower labor underinvestment. We find no differences in terms of labor overinvestment. Panel A of Table 6 also shows that companies characterized by more intensive social CSR have a higher market-to-book ratio (MTB), leverage (LEV), net property plant and equipment (NPPE), cash flow volatility (CFV), and sales volatility (SALV). These same companies have lower liquidity (CTC) and labor investment volatility (LIV) than their counterparts.

Panel B of Table 6 shows an almost opposite view when firms are classified based on the level of employment protection. Companies operating in an environment with EPL higher than the mean exhibit lower overinvestment (OINV), market-to-book ratio (MTB), leverage (LEV), and dividend payments (DIVP). At the same time, they tend to have higher underinvestment (UINV), keep more liquidity (CTC), and are slightly more labor intensive (INTENSE).

4.2 | Effect of Social CSR on Labor Overinvestment

To test the first two hypotheses, we estimate the model in Equation (2) without the moderating variable. The resulting model is as follows:

$$\begin{aligned} \mathrm{INEF}_{it} = {} & \alpha + \beta_1 \mathrm{SCSR}_{it} + \beta_2 \mathrm{INEF}_{i,t-1} \\ & + \beta_3 \mathrm{MTB}_{i,t-1} + \beta_4 \mathrm{LEV}_{i,t-1} \\ & + \beta_5 \mathrm{CTC}_{i,t-1} + \beta_6 \mathrm{NPPE}_{i,t-1} \\ & + \beta_7 \mathrm{LOSS}_{i,t-1} + \beta_8 \mathrm{DIVP}_{i,t-1} \\ & + \beta_9 \mathrm{INTENSE}_{i,t-1} + \beta_{10} \mathrm{CFV}_{it} \\ & + \beta_{11} \mathrm{LNSALES}_{i,t-1} + \beta_{12} \mathrm{LIV}_{it} \\ & + \beta_{13} \mathrm{ABOINV}_{it} + \eta_i + d_t + \upsilon_{it} \end{aligned} \quad (3)$$

Column 1 of Table 7 displays the regression results for the direct effect of social CSR on labor overinvestment. The empirical evidence shows that social CSR positively affects labor overinvestment. More specifically, it increases overinvestment with a highly ignificant coefficient of 0.0238, suggesting that social CSR investments can reinforce managers' interest in pursuing a good personal reputation.

TABLE 5 | Correlation table.

	OINV	UINV	SCSR	MTB	LEV	CTC	NPPE	LOSS	DIVP	INTENSE	LNSALES	CFV	LIV	ABOINV
OINV	1													
UINV	−0.20	1												
SCSR	0.04	−0.08	1											
MTB	−0.04	−0.01	0.07	1										
LEV	0.07	0.01	0.11	−0.30	1									
CTC	0.00	0.01	−0.10	0.29	−0.30	1								
NPPE	0.01	−0.03	0.20	−0.13	0.08	−0.12	1							
LOSS	0.02	0.04	0.02	−0.14	0.05	−0.03	0.02	1						
DIVP	0.00	0.01	−0.26	0.00	−0.11	0.11	−0.72	0.02	1					
INTENSE	0.01	−0.04	−0.10	0.07	−0.15	−0.04	−0.14	−0.05	0.13	1				
LNSALES	0.04	−0.10	0.51	−0.14	0.21	−0.28	0.47	−0.01	−0.50	−0.12	1			
CFV	0.02	−0.02	0.26	−0.07	0.09	−0.12	0.80	0.04	−0.80	−0.15	0.57	1		
LIV	0.26	0.09	0.00	−0.10	0.14	−0.03	−0.04	0.10	0.05	−0.03	−0.02	−0.01	1	
ABOINV	0.00	−0.02	0.04	−0.01	0.00	−0.03	0.01	0.00	0.00	−0.01	0.05	0.01	0.00	1

Note: The correlation among the variables in the explanatory models.

TABLE 6 | Mean difference tests.

Panel A: High versus low SCSR				
	All	**High SCSR**	**Low SCSR**	***t*-statistic (2)–(3)**
	(1)	**(2)**	**(3)**	**(4)**
OINV	0.0363	0.0391	0.0351	1.2856
UINV	0.0381	0.0298	0.0415	−4.3423***
MTB	1.3176	1.3763	1.2935	2.0130**
LEV	0.2410	0.2602	0.2331	5.2187***
CTC	1.6631	1.4731	1.7413	−7.8443***
NPPE	0.0797	0.1802	0.0384	14.5880***
LOSS	0.0475	0.0513	0.0443	1.4682
DIVP	0.9869	0.9924	0.9847	1.9634**
INTENSE	0.0048	0.0039	0.0052	−6.0946***
CFV	0.0288	0.0585	0.0165	17.8340***
SALV	1.3691	2.5228	0.8943	12.0783***
LIV	0.1112	0.1038	0.1142	−2.4721**
ABOINV	−0.3021	−0.1690	−0.3568	1.0600
Panel B: High versus low employment protection				
	All	**High protection**	**Low protection**	***t*-statistic (2)–(3)**
	(1)	**(2)**	**(3)**	**(4)**
OINV	0.0363	0.0315	0.0412	−3.4305***
UINV	0.0381	0.0327	0.0436	−4.4672***
MTB	1.3176	1.1632	1.4792	−8.5165***
LEV	0.2410	0.2357	0.2466	−2.3035**
CTC	1.6631	1.5970	1.7322	−4.3247***
NPPE	0.0797	0.0808	0.0786	−0.2462
LOSS	0.0475	0.0435	0.0516	−1.2106
DIVP	0.9869	0.9807	0.9934	−3.5722***
INTENSE	0.0048	0.0052	0.0043	4.5859***
CFV	0.0288	0.0247	0.0329	−3.6564***
SALV	1.3691	1.3017	1.4395	−1.1045
LIV	0.1112	0.0988	0.1241	−6.6526
ABOINV	−0.3021	−0.2277	−0.3799	0.9446

Note: The results of the bivariate mean difference tests according to the social CSR (SCSR) variable. It splits SCSR into higher (High SCSR) and lower (Low SCSR) than the mean (Panel A) and divides the sample into high protection and low protection depending on the employment protection legislation index above and below the average, respectively (Panel B). The variables OINV and UINV are the dependent variables, and the other variables are control variables also used in hypotheses testing. All variables are defined in Appendix A. *** $p < 0.01$.** $p < 0.05$.* $p < 0.1$.

Our findings support Hypothesis H1b, indicating that social CSR efforts directly and positively affect labor overinvestment. This result provides new knowledge by demonstrating that the increased value of the company, which numerous studies attribute to CSR efforts (e.g., Adhikari 2016; Dhaliwal et al. 2011; Cheng, Ioannou, and Serafeim 2014), can lead to an excess of available cash for managers' discretionary use.

Consequently, our empirical evidence suggests that managers take advantage of such increments in available cash to pursue

TABLE 7 | Testing hypotheses based on the social CSR.

	(1)	(2)	(3)	(4)
Variables	**OINV**	**UINV**	**OINV**	**UINV**
SCSR	0.0238***	−0.0365***	−0.0264	−0.2009***
	(0.0079)	(0.0091)	(0.0352)	(0.0386)
EPL*CSR			0.0224	0.0672***
			(0.0149)	(0.0158)
EPL			−0.1054***	−0.1192***
			(0.0278)	(0.0311)
$INEF_{i,t-1}$	−0.0384***	−0.0030	−0.0392***	−0.0086
	(0.0043)	(0.0057)	(0.0044)	(0.0059)
$MTB_{i,t-1}$	0.0082***	−0.0092***	0.0075***	−0.0121***
	(0.0018)	(0.0020)	(0.0018)	(0.0022)
$LEV_{i,t-1}$	−0.0680***	0.0258	−0.0642***	0.0396*
	(0.0229)	(0.0202)	(0.0228)	(0.0216)
$CTC_{i,t-1}$	0.0086***	−0.0023*	0.0075***	−0.0047***
	(0.0016)	(0.0014)	(0.0017)	(0.0015)
$NPPE_{i,t-1}$	−0.0224***	−0.0009	−0.0206***	0.0020
	(0.0075)	(0.0069)	(0.0074)	(0.0077)
$LOSS_{i,t-1}$	0.0007	0.0023	−0.0015	0.0011
	(0.0024)	(0.0025)	(0.0025)	(0.0027)
$DIVP_{i,t-1}$	−0.0006	−0.0075*	−0.0017	−0.0101**
	(0.0047)	(0.0041)	(0.0046)	(0.0050)
$INTENSE_{i,t-1}$	−0.6063	−0.9995**	−0.5726	−0.8264
	(0.4513)	(0.5066)	(0.4507)	(0.5163)
$\Delta SALES_{it}$	0.0197***	0.0282***	0.0214***	0.0267***
	(0.0062)	(0.0050)	(0.0063)	(0.0052)
$LNSALES_{i,t-1}$	−0.0006	−0.0058**	0.0002	−0.0042
	(0.0032)	(0.0024)	(0.0032)	(0.0027)
CFV_{it}	0.0806	−0.0359	0.0790	−0.0453
	(0.0546)	(0.0402)	(0.0551)	(0.0466)
LIV_{it}	0.2103***	−0.1574***	0.1880***	−0.2198***
	(0.0325)	(0.0367)	(0.0327)	(0.0424)
$ABOINV_{it}$	0.0001***	−0.0001**	0.0001***	−0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
t_1			0.1874	5.6747
z_1	17.19 (14)	8.39 (14)	15.42 (16)	10.30 (16)
z_2	19.05 (6)	10.67 (6)	22.34 (6)	11.9 (6)
z_3	3.09 (9)	3.95 (9)	2.82 (9)	2.90 (9)
z_4	4.60 (24)	2.83 (29)	4.91 (29)	2.61 (29)

(Continues)

TABLE 7 | (Continued)

	(1)	(2)	(3)	(4)
Variables	**OINV**	**UINV**	**OINV**	**UINV**
m_1	−3.500	−5.046	−3.510	−5.067
m_2	−1.210	1.610	−1.200	1.610
Hansen	285.83 (278)	296.040 (278)	278.770 (276)	337.619 (276)

Note: This table presents the coefficients (standard deviations) for the variables of the models derived in Section 4, estimated by the system-generalized method of moments. The dependent variable is one of the following inefficiencies: Overinvestment (OINV) or underinvestment (UINV). The main independent variable is social CSR (SCSR), and we also analyze the moderation role of the employment protection legislation (EPL) variable. Time, country, and industry dummy variables are included but not reported. t_1 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\beta_2+\gamma_1=0$. z_1, z_2, z_3, and z_4 are Wald tests of the joint significance of all explanatory variables, the time, industry, and country dummy variables, respectively, under the null of no relation, with the degrees of freedom in parentheses. m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as $N(0, 1)$ under the null of no serial correlation. Hansen is a test of the overidentifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term; degrees of freedom are in parentheses. All variables are defined in Appendix A.
***$p<0.01$.
**$p<0.05$.
*$p<0.1$.

labor overinvestment. According to the framework (Figure 1), such an effect may be due to the company reputation approach and personal reputation approach simultaneously.

4.3 | Effect of Social CSR on Labor Underinvestment

Column 2 of Table 7 displays the regression results for the direct effect of social CSR on labor underinvestment. The estimated coefficients indicate that firms engaging in more social CSR activities exhibit lower rates of labor underinvestment. Specifically, the reduction in underinvestment is statistically significant, with a coefficient of −0.0365. This result supports H2a, suggesting that social CSR investments enhance a company's image and value to shareholders.

Our findings regarding labor investment build on the arguments of Adhikari (2016) and Kuo, Lin, and Chien (2021), who argue that company value can be enhanced via CSR initiatives. Our results indicate that companies improve their reputation through social CSR efforts, which, in turn, reduces the likelihood of shareholders penalizing them by incorporating asymmetric information costs into their securities. This ultimately leads to reduced underinvestment. These findings support H2a and are consistent with both approaches related to economic performance motivation (Figure 1): the financial performance approach and the company reputation approach.

4.4 | The Moderating Effect of Employment Protection Legislation on the Impact of Social CSR on Labor Overinvestment

Next, we examine how EPL (as a mandatory improvement of safe workplace perception) moderates the impact of social CSR on labor overinvestment (H3). To this end, we used the model in Equation (2) with the moderator variable, specifically introducing the interaction between the social CSR variable and the OECD EPL indicator for the country and year. As a result, we obtained the following model:

$$\begin{aligned}\mathrm{INEF}_{it} = {} & \alpha + \left(\beta_1 + \gamma_1 \mathrm{EPL}_{it}\right)\mathrm{SCSR}_{it} + \beta_2 \mathrm{EPL}_{it} \\ & + \beta_3 \mathrm{INEF}_{i,t-1} + \beta_4 \mathrm{MTB}_{i,t-1} + \beta_5 \mathrm{LEV}_{i,t-1} \\ & + \beta_6 \mathrm{CTC}_{i,t-1} + \beta_7 \mathrm{NPPE}_{i,t-1} + \beta_8 \mathrm{LOSS}_{i,t-1} \\ & + \beta_9 \mathrm{DIVP}_{i,t-1} + \beta_{10} \mathrm{INTENSE}_{i,t-1} + \beta_{11} \mathrm{CFV}_{it} \\ & + \beta_{12} \mathrm{LNSALES}_{i,t-1} + \beta_{13} \mathrm{LIV}_{it} + \beta_{14} \mathrm{ABOINV}_{it} \\ & + \eta_i + d_t + \upsilon_{it}\end{aligned} \tag{4}$$

Column 3 of Table 7 reports the results with labor overinvestment as a dependent variable. Interestingly, EPL has no moderating effect on the impact of social CSR on labor overinvestment. This result extends the argument of Pagano and Volpin (2005) that managers have a personal interest in generous employment policies to reduce takeover threats. Thus, managers may be motivated to overinvest in labor despite the increased operational risk caused by stringent EPL. This empirical evidence aligns with company reputation and personal reputation as the two primary motivators for investing in CSR. More specifically, once the risk of investing in social CSR increases and social CSR efforts become redundant due to mandatory EPL, managers will still be motivated to overinvest in labor due to personal interests.

4.5 | The Moderating Effect of Employment Protection Legislation on the Impact of Social CSR on Labor Underinvestment

We use the same model in Equation (4) with underinvestment as the dependent variable to test our fourth hypothesis. Table 7, Column 4, reports the results of testing the labor underinvestment model. The direct effect of social CSR is negative and significant, with a value of −0.2009.

Focusing on the effect of the interaction between EPL and social CSR, we observe a positive and highly significant effect, with a coefficient of 0.0672. Given that this coefficient has the opposite sign as the coefficient that captures the direct effect of the CSR variable, we conduct a linear restriction test to determine whether the sum of both coefficients is significantly different from zero ($-0.2009+0.0672=-0.1337$). Under the

null hypothesis that the positive interaction effect counteracts the negative direct effect of CSR on labor underinvestment, we carried out the linear restriction test, whose *t*-value was 5.6747; therefore, we reject the null hypothesis. Consequently, we conclude that EPL mitigates, but does not cancel, the effect of social CSR on underinvestment, which is still negative.

This result can be explained by the shareholder perception of the operational risk related to EPL or the substitution effect between social CSR initiatives and EPL. This perception of operational risk can arise despite the remaining motivation for CSR efforts, which agrees with the financial performance approach and the company reputation approach.

5 | Additional Tests

5.1 | Employee-Centric CSR as an Alternative Measurement of SCSR

As an additional analysis, we estimate all models using employee-centric CSR (WCSR) as an alternative measurement of SCSR. Refinitiv EIKON calculates the employee-centric CSR to measure specific efforts to create a safe workplace environment through efforts on diversity, career development and training, working conditions, and health and safety. Consequently, the CSR efforts considered are more closely related to the employer–employee relationship.

We find that employee-centric CSR efforts affect both labor over- and underinvestment. Table 8 shows that WCSR positively increases overinvestment with a highly significant coefficient of 0.0047 (Column 1) and reduces underinvestment with a highly significant coefficient of −0.0056 (Column 2). We also find that the EPL plays a moderating role in WCSR. In fact, EPL reduces both effects with a negative and highly significant coefficient for the labor overinvestment effect (−0.0018; Column 3) and a positive and highly significant effect on underinvestment (0.0023; Column 4).

After testing for linear restriction, we reject the hypothesis that the sum of the WCSR coefficient and the coefficient of its interaction with EPL are both equal to zero. That means that the EPL moderates, but does not change, the relation between WCSR and over- and underinvestment in labor. These findings also corroborate our previous results for the SCSR variable, which can be explained by the closer relation between the Refinitiv Eikon Workforce CSR and the relevant stakeholders.

5.2 | Channels That Explain the Impact of Social CSR

We also examine the impact of social CSR on a firm's productivity, net income, cash flow, and sales to verify the series of channels that can explain the effect of social CSR on labor investment inefficiencies. An important dimension of a firm that the social impact of SCSR may influence is the company's employee productivity, which we measure as the sales per employee. Higher productivity can explain a higher intention to overinvest in labor as it is related to improved revenue. To test the effects of social CSR on productivity, we adapt Equation (3) using productivity as the dependent variable and use the same estimation process described in Section 3.3. Table 9 (Column 1) shows that social CSR can boost productivity (PROD), thus motivating an overinvestment scenario. Also, increased productivity would signal to shareholders a correlation between overinvesting and achieving better results.

We also test the effect of social CSR on net income, which may partly explain the propensity to labor overinvestment. To this end, we use the net income scaled to total assets. The empirical evidence in Table 9, Column 2, suggests that social CSR positively impacts net income. This finding explains how a company's improved financial performance leads to a higher level of investment in labor.

We also tested the effect of social CSR on cash flow, which may boost labor inefficiencies since cash flow is a key variable that explains a company's behavior. The results show that social CSR positively affects cash flow (Table 9, Column 3). This positive impact highlights the role of social CSR in the cash flow–generating process, which, consequently, plays a crucial channel role that leads to investment inefficiencies.

Finally, we test the effect of social CSR on sales and provide empirical evidence on the role of sales, measured as the natural logarithm of sales. In this case, social CSR is positively related to sales (Table 9, Column 4). This result explains why sales are very important for sustaining employment levels; that is, higher sales driven by greater social CSR justifies the investment in human capital.

6 | Discussion

Taking into account the direct effects of social CSR on labor investment inefficiencies, as supported by H1b (social CSR efforts increase labor overinvestment) and H2a (social CSR efforts reduce labor underinvestment), the results shown in Table 7 (Columns 1 and 2) indicate that increases in social CSR (coefficients 0.0238 and − 0.0365) consistently encourage labor investment. Whereas Chintrakarn, Jiraporn, and Treepongkaruna (2021) suggest that agency problems may drive CSR investment, as they relate CSR investment during a financial crisis to managers' risk aversion, we argue that the tendency to overinvest in labor in this context is better attributed to the greater importance placed on company reputation over the desire to invest efficiently in labor, as shown in Figure 1. This finding holds under both approaches from the perspective of the economic performance motivation—namely, financial performance and company reputation. In other words, shareholders view labor overinvestment as a safeguard for social CSR investment and the resulting enhanced reputation.

Therefore, the results suggest that the overinvestment issue related to high CSR is not due to empire-building behaviors or moral hazard as supposed by Jung, Lee, and Weber (2014). Instead, it is a strategic measure to uphold the company's reputation as a socially responsible entity, effectively reinforcing its status as a good employer. This finding aligns with the company

TABLE 8 | Alternative measurement for social CSR.

	(1)	(2)	(3)	(4)
Variables	**OINT**	**UINV**	**OINT**	**UINV**
WCSR	0.0047***	−0.0056***	0.0248***	−0.0292***
	(0.0017)	(0.0017)	(0.0041)	(0.0041)
EPL*WCSR			−0.0018***	0.0023***
			(0.0004)	(0.0004)
EPL			−0.0308*	−0.0842***
			(0.0183)	(0.0181)
$INEF_{i,t-1}$	−0.0362***	−0.0082	−0.0346***	−0.0097**
	(0.0041)	(0.0056)	(0.0034)	(0.0049)
$MTB_{i,t-1}$	0.0053***	−0.0069***	0.0038***	−0.0058***
	(0.0018)	(0.0019)	(0.0013)	(0.0016)
$LEV_{i,t-1}$	−0.0883***	0.0514***	−0.0486***	0.0487***
	(0.0219)	(0.0189)	(0.0160)	(0.0163)
$CTC_{i,t-1}$	0.0082***	−0.0018	0.0070***	−0.0021*
	(0.0016)	(0.0013)	(0.0014)	(0.0011)
$NPPE_{i,t-1}$	−0.0147**	0.0011	−0.0191***	0.0124**
	(0.0074)	(0.0074)	(0.0072)	(0.0057)
$LOSS_{i,t-1}$	−0.0011	0.0017	−0.0025	0.0024
	(0.0025)	(0.0026)	(0.0018)	(0.0024)
$DIVP_{i,t-1}$	0.0025	−0.0021	0.0019	−0.0171***
	(0.0046)	(0.0043)	(0.0037)	(0.0036)
$INTENSE_{i,t-1}$	−1.3318***	−0.6781	−0.5389*	−0.7258**
	(0.4831)	(0.4162)	(0.3082)	(0.3108)
$\Delta SALES_{it}$	0.0260***	0.0211***	0.0192***	0.0182***
	(0.0065)	(0.0049)	(0.0048)	(0.0038)
$LNSALES_{i,t-1}$	0.0025	−0.0117***	−0.0022	−0.0091***
	(0.0033)	(0.0022)	(0.0023)	(0.0016)
CFV_{it}	0.0111	0.0096	0.0797**	−0.0344
	(0.0543)	(0.0416)	(0.0404)	(0.0286)
LIV_{it}	0.1864***	−0.1459***	0.2217***	−0.1048***
	(0.0355)	(0.0356)	(0.0196)	(0.0263)
$ABOINV_{it}$	0.0001***	−0.0001***	0.0001***	−0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
t_1			6.1060	−7.1601
z_1	14.79 (14)	11.73 (14)	24.98 (16)	19.26 (16)
z_2	16.21 (6)	9.76 (6)	20.50 (6)	10.94 (6)
z_3	4.58 (9)	3.02 (9)	6.64 (9)	4.92 (9)
z_4	4.47 (29)	2.81 (29)	4.68 (29)	4.48 (29)

(Continues)

TABLE 8 | (Continued)

	(1)	(2)	(3)	(4)
Variables	**OINT**	**UINV**	**OINT**	**UINV**
m_1	−3.510	−5.000	−3.550	−5.000
m_2	1.170	1.530	−1.190	1.480
Hansen	288.62 (278)	288.19 (278)	318.71 (320)	319.82 (320)

Note: The coefficients (standard deviations) for the variables of the models derived in Section 4, estimated by the system generalized method of moments by using as the main independent variable an alternative measurement for social CSR, that is, the employee-centric CSR (WCSR) variable. The dependent variable is one of the following inefficiencies: Overinvestment (OINV) and underinvestment (UINV). We also analyze the moderation role of the employment protection legislation (EPL) variable. Time, country, and industry dummy variables are included but not reported. t_1 is the t-statistic for the linear restriction test under the null hypothesis H_0: $\beta_2+\gamma_1=0$. z_1, z_2, z_3, and z_4 are Wald tests of the joint significance of all explanatory variables, the time, industry, and country dummy variables, respectively, under the null of no relation, with the degrees of freedom in parentheses. m_1 is a serial correlation test of order i using residuals in first differences, asymptotically distributed as $N(0, 1)$ under the null of no serial correlation. Hansen is a test of the overidentifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term; degrees of freedom are in parentheses. All variables are defined in Appendix A.
***$p<0.01$.
**$p<0.05$.
*$p<0.1$.

TABLE 9 | Channels that explain the impact of social CSR.

	(1)	(2)	(3)	(4)
Variables	**PROD**	**NMINC**	**NMCF**	**LNSALES**
$SCSR_{it}$	0.0652***	0.0062***	0.0040***	0.0367*
	(0.0131)	(0.0023)	(0.0013)	(0.0204)
$PROD_{i,t-1}$	0.9746***			
	(0.0016)			
$NINCOME_{i,t-1}$		0.2556***		
		(0.0023)		
$CF_{i,t-1}$			0.4096***	
			(0.0016)	
$LNSALES_{i,t-1}$				0.9592***
				(0.0088)
z_1	37.69 (13)	20,110.8 (13)	4019.17 (145)	47,276.64
z_2	148.34 (6)	29.08 (6)	86 (6)	7.33 (6)
z_3	4.11 (9)	3.96 (9)	20.53 (9)	3.19 (9)
z_4	3.96 (29)	15.22 (29)	34.9 (29)	19.02 (28)
m_1	−7.00	−1.59	−1.57	−2.6
m_2	0.38	0.82	0.31	1.11
Hansen	268.11 (241)	241.37 (251)	334.83 (313)	235.63 (243)

Note: The regression results from estimating the models defined in Section 5.2, using the system generalized method of moments. The dependent variables are productivity (PROD), net income (NINCOME), cash flow (CF), and sales (LNSALES). The main independent variable is Social CSR (SCSR). The remaining independent variables are not reported (available upon request from the authors), Time, country, and industry dummies are included but not reported. z_1, z_2, z_3, and z_4 are Wald tests of the joint significance of all explanatory variables, the time, industry, and country dummy variables, respectively, under the null of no relation, with the degrees of freedom in parentheses. m_i is a serial correlation test of order i using residuals in first differences, asymptotically distributed as $N(0, 1)$ under the null of no serial correlation. Hansen is a test of the overidentifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term; degrees of freedom are in parentheses. All variables are defined in Appendix A. ***$p<0.01$. **$p<0.05$. *$p<0.1$.

reputation approach, suggesting that companies investing in CSR to obtain a higher reputation tend to overinvest in labor. This result is in line with the financial performance approach proposed by Adhikari (2016).

When we extend our analysis to account for the possible substitutive effect of EPL, which may mitigate the effects of CSR on labor investment inefficiencies (H3 and H4), we find that such legislation mitigates the impact of social CSR on labor

underinvestment, as shown in Table 7 (Column 4) but does not affect companies that overinvest in labor (Column 3). In this context, the results suggest that employment protection laws provide a safety net that reduces the need for additional CSR-driven efforts to ensure a secure workplace, thus significantly impacting underinvestment scenarios. Referring to the causes of labor investment imbalances discussed by Ben-Nasr and Alshwer (2016) and Ghaly, Dang, and Stathopoulos (2020), we argue that shareholders' initial support for labor overinvestment is contingent upon low levels of EPL.

This support wanes as efforts to enhance workplace safety through CSR become redundant due to the protections already provided by law. The effect is also supported by signaling theory and is in line with the policy intervention effects on the cost of debt and equity, as presented by Prasad et al. (2022). This finding underscores the importance of considering regulatory environments when evaluating the effectiveness of CSR initiatives.

7 | Implications and Future Studies

7.1 | Theoretical Implications

This study suggests that CSR should be analyzed from the perspective of shareholders. We analyze the social CSR effects on labor investment efficiency and show that social CSR impacts both labor over- and underinvestment. Our findings also suggest that the effect is caused by efforts to improve the perception of a safe workplace environment, thus building a company's reputation.

7.2 | Practical Implications

This study has relevant practical implications for managers and shareholders aiming to improve labor investment decisions and effectively manage social CSR investments. Our analysis reveals the effect of social CSR on labor investment decisions. It clarifies how shareholders should finance labor while balancing the manager's ability to pursue personal interests through labor policy.

7.3 | Policy Implications

This study shows that EPL is a substitute for social CSR, leading to improved labor investment. However, studies that analyze the effects of EPL on labor would suggest that regional employment levels could be threatened by stringent legislation. Consequently, our results may lead policymakers to adopt a conservative approach to EPL, leading to a progressive evolution of labor interactions.

7.4 | Limitations and Future Studies

This study is limited by the standardized, although generic, approach to employment protection provided by the OECD Employment Protection Index. In this context, a future study should examine how specific EPL changes affect the relationship between social CSR and labor investment efficiency. Another approach would be to further observe how specific workforce CSR efforts affect labor investment inefficiencies.

8 | Conclusions

This study investigates the effect of social CSR practices on labor investment efficiency. This topic is particularly timely as companies have struggled to retain talent and could benefit from social CSR investment and better labor investment efficiency. The following key conclusions can be drawn from our empirical findings.

First, social CSR directly affects labor investment inefficiencies. More specifically, it reduces labor underinvestment while increasing labor overinvestment. Given that financing labor is difficult and expensive, one possible explanation for this effect is the improved financial performance resulting from the social CSR investment.

Second, social CSR positively impacts labor overinvestment. We explain this phenomenon as a governance problem, given that one of the main reasons for investing in social CSR is managers' desire for personal reputation. Poor governance could lead to an increase in social CSR, and consequently, this empire-building behavior by managers gives rise to labor overinvestment.

Third, social CSR reduces labor underinvestment, which can be explained by the effects of social CSR investment as enhanced financial performance and better reputation, as well as the argument that social CSR can be considered a hedging mechanism against changes in the economic scenario.

Fourth, the EPL moderates the effect of social CSR on labor underinvestment. This effect can be explained by operational risk perception and shareholder response. More specifically, EPL has a substitution effect on the social CSR investment capability of reducing underinvestment.

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Appendix A

Definition and Computation of the Variables

Variable	Equation	Definition
OINV	$\{ \text{OINV} = \text{LII if LII} > 0 \ \text{OINV} = 0 \text{ if } \text{LII} \leq 0$	Overinvestment in labor; NHIRE is higher than expected
UINV	$\{ \text{UINV} = -1 * \text{LII if LII} < 0 \ \text{UINV} = 0 \text{ if LII} \geq 0$	Underinvestment in labor; NHIRE is lower than expected
SCSR	—	Eikon Database CSR's social dimension score, scaled from 0 to 1.
HighCSR	$\begin{cases} 1 \text{ if CSR} > \widehat{\text{CSR}} \\ 0 \text{ if CSR} \leq \widehat{\text{CSR}} \end{cases}$	Dummy that takes the value of 1 if the social dimension of CSR score is higher than the mean, and 0 otherwise.
ABOINV	$\text{NPPE} - \underline{\text{NPPE}}$	The difference of observed nonlabor investment to estimated nonlabor investment (available upon request from the authors)
CF	—	Cash flow from EIKON database
CFV	$\sqrt{\frac{\sum (\text{CF} - \underline{\text{CF}})^2}{n}}$	Cash flow volatility as the variance of cash flow for a company
CTC	$\frac{\text{Current assets}}{\text{current liabilities}}$	The ratio of current assets to current liabilities
DIVP	$\{ \text{DIVP} = 1 \text{ if (payout} > 0) \ \text{DIVP} = 0$	Dummy for dividend payer
EPL	—	OECD General Employment Protection Indicator
IALI		Industry mean of NHIRE (as labor investment)
INTENSE	$\frac{\text{Employees}}{\text{total assets}}$	The labor intensity measured as the ratio of employees per asset
LEV	$\frac{\text{Total debt}}{\text{total assets}}$	Book leverage
LII	$\text{NHIRE} - \underline{\text{NHIRE}}$	Difference between observed NHIRE and estimated NHIRE
LIV	$\sqrt{\frac{\sum (\text{NHIRE} - \underline{\text{NHIRE}})^2}{n}}$	Labor investment volatility as the labor investment variance.
LNEMP	ln (employees)	Logarithm of the number of employees
LNSALES	ln(total sales)	Logarithm of sales
LOSS	$\{ \text{LOSS} = 1 \text{ if (ROA} < 0) \ \text{LOSS} = 0$	Dummy = 1 if ROA < 0, and zero otherwise
LossBIN	$\text{LossBin}_n = -0.005n < \text{ROA} < -0.005(n-1)$ $n \in \mathbb{N}; 0 < n \leq 5$	Dummies for small losses, defined by Pinnuck and Lillis (2007) as five dummy variables that capture the effects of small losses from 0 to 0.025 in widths of 0.005
MTB	$\frac{\text{VALUE}}{\text{total assets}}$	Market-to-book ratio
NHIRE	$\frac{\text{Employees}_{i,t} - \text{employees}_{i,t-1}}{\text{employees}_{i,t-1}}$	Proportional growth of the total number of employees
NINCOME	—	Declared net income after taxes
NMINC	$\frac{\text{NINCOME} - \widehat{\text{NINCOME}}}{\sigma_{\text{NINCOME}}}$	Standardized value of Net Income
NMCF	$\frac{\text{CF} - \widehat{\text{CF}}}{\sigma_{\text{CF}}}$	Standardized value of Cash Flow
NPPE	—	Net property plant and equipment
PROD	$\frac{\text{Revenue}}{\text{number ofemployees}}$	The team productivity, as a ratio of the total revenue to the team size.
ROA	$\frac{\text{Net profit}}{\text{total assets}}$	The ratio of net profit to total assets

Variable	Equation	Definition
ROE	$\frac{\text{Net profit}}{\text{Total equity}}$	The ratio of net profit to total equity
VALUE	(Share price) $*$ (number of shares)	Market value at the end of the period
WCSR	ln(Workforce)	Refinitiv Eikon employee-centric ranking as the logarithm of a categorical variable
ΔSALES	$\frac{\text{REV}_{i,t} - \text{REV}_{i,t-1}}{\text{REV}_{i,t-1}}$	Proportional changes in sales compared to a previous period
ΔPROFIT	$\frac{\text{Net profit}_{i,t} - \text{net profit}_{i,t-1}}{\text{net profit}_{i,t-1}}$	Proportional change in profit
ΔCTC	$\frac{\text{CTC}_{i,t} - \text{CTC}_{i,t-1}}{\text{CTC}_{i,t-1}}$	Proportional change in CTC