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Do Board-Level Employee Representatives Increase Pay Equity in Firms?

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ABSTRACT

Question/Issue: This study investigates the role of board-level employee representatives (BLERs), a common corporate governance practice in Europe, in determining the pay ratio between CEOs and average employees.

Research Findings/Insights: Using 15,340 firm-year observations from 17 European countries between 2001 and 2019, we find that BLERs provide greater bargaining power to the board for dealing with CEOs and use this power to reduce the pay gap between CEOs and employees. Subsample analyses indicate that bargaining power is more apparent when BLERs are more socially connected, have longer tenure, and hold more seats on the board.

Theoretical/Academic Implications: This study supports the role of BLERs in providing workers with more bargaining power to create fairer wage distribution in firms. Furthermore, it supports the fair wage–effort theory, indicating a positive effect of lower pay ratios on firm value following the presence of BLERs.

Practitioner/Policy Implications: This study demonstrates the effects of a unique corporate governance practice, the presence of BLERs, on companies' wage distribution, with significant policy implications. In particular, the results indicate that when presented with opportunities in affecting companies decision-making BLERs provide fairer environments for the workers who they represent.

Fair pay within companies matters; it affects productivity, employee engagement and trust in our businesses.

Joseph Stiglitz (*The Price of Inequality*, 2012)

1 | Introduction

In the early 1970s, many European countries began implementing co-determination laws requiring the presence of labor (i.e., employee representatives) on boards of directors. These laws exist in various forms across European countries, ranging from stringent regulations to voluntary adoption based on mutual agreements between employers and employees. Although the extant literature has documented how board-level employee

representatives (BLERs) shape firms' financial leverage (Lin, Schmid, and Xuan 2018), corporate payout policies (Ginglinger, Megginson, and Waxin 2011) and job security during an industry downturn (Kim, Maug, and Schneider 2018), their role is not yet fully understood. Based on this line of inquiry, we examine how BLERs affect the pay gap¹ between top executives and average workers² by changing the power dynamics in pay negotiations, thereby influencing firm value.

Recently, wide pay gaps between top executives and average workers have triggered a public outcry,³ as employees often use CEO compensation as a reference to measure the fairness of rewards for their workplace efforts (Wade, O'Reilly, and Pollock 2006). According to Bloomberg,⁴ in 2017, the United States had a pay ratio of 265, the highest in the world—on

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average, CEO pay was 265 times higher than that of an average worker.⁵ As CEO compensation continues to grow faster than average worker wages, concerned regulators and politicians are seeking ways to close this gap.

Using 15,340 firm-year observations from 17 European countries, we first test the influence of BLERs on pay structure. We conjecture that BLERs, from either the governance⁶ or bargaining power standpoint, affect the pay gap. Hayes and Schaefer's (1999) labor bargaining power theory describes wage levels as a function of bargaining power between contracting parties, given each party's power limitations. Wage dynamics are the product of a power battle between executives and the board of directors. Strong labor power in the boardroom can decrease top executives' compensation, narrowing the pay gap. For instance, DeAngelo and DeAngelo (1991) find reduced CEO compensation during union negotiations with firms. Banning and Chiles (2007) and Huang et al. (2017) also find that powerful unions reduce executive compensation. Gorton and Schmid (2004) show that granting more board seats to BLERs benefits employees, as evidenced by payroll data and higher staffing levels.

However, evidence suggests that an increase in labor power leads to higher CEO compensation. Lin, Schmid, and Xuan (2018) show a tradeoff between CEO and employees. When employee representatives are added to a board, CEO compensation increases by a third, whereas employees can secure their jobs. In the executive-worker-alliance hypothesis, Pagano and Volpin (2005) describe employees and executives as both benefiting from higher wages and job security, which is a common interest that may motivate them to form an alliance. In this situation, the mutual preferences of BLERs and CEOs for higher wages and job security may shift loyalty toward the CEO, increasing agency issues by giving more power to a rent-extracting CEO at the cost of employees or shareholders (Bertrand and Mullainathan 2003; Gorton and Schmid 2004; Pagano and Volpin 2005; Cronqvist et al. 2009; Levine, Lin, and Shen 2015; Dessaint, Golubov, and Volpin 2017). In this scenario, the pay gap may increase further.

Notably, the presence of BLERs is critical in mitigating the pay gap by giving workers more bargaining power and the ability to limit rent-seeking CEOs when designing compensation. Confirming this argument, we show that the decline in the pay gap is mainly due to a reduction in CEO compensation. This result is consistent with the idea that labor co-determination creates a fairer working environment by reducing the pay gap. This effect is stronger for firms operating in countries exposed to high expropriation risk (i.e., the risk associated with CEO overcompensation) and those with a culture in which board members are less inclined to challenge CEOs, implying a solid bargaining and governance role for BLERs.⁷ Our subsample analyses confirm the importance of the bargaining power of these directors and indicate that the pay-ratio reduction is more substantial when BLERs have a larger social network and longer tenure. Moreover, we show that as the concentration of BLERs on the board increases, so does their effectiveness in reducing the pay ratio in firms.

Next, we test pay-structure value creation following the addition of BLERs. According to the tournament theory, a high pay

ratio motivates employees to increase their efforts for promotion and earn correspondingly higher compensation, leading to strong firm performance (Mueller, Ouimet, and Simintzi 2017). According to this theory, changes in the pay ratio owing to the presence of BLERs positively affect labor productivity and firm performance. Contrary to the tournament theory, the fair wage-effort theory (Akerlof and Yellen 1990) posits that employees do not try to maximize productivity when they feel their wages fall short of the anticipated fair wage level. Similarly, equity theory predicts that a less dispersed pay structure within a firm significantly increases employees' workplace productivity and morale (Adams 1965). Other evidence suggests that paying above-average compensation to employees increases firm productivity (e.g., Cappelli and Chauvin 1991; Propper and Van Reenen 2010; Mueller, Ouimet, and Simintzi 2017).

The effectiveness of BLERs in shareholder value maximization is controversial. BLERs may cause conflicts of interest, where one group pursues the interests of shareholders and another represents employees' interests.⁸ Consistent with this view, Faleye, Mehrotra, and Morck (2006) show that employee power is negatively associated with long-term investment, sales, employee growth, and firm risk exposure, given employees' preference for prioritizing long-term firm sustainability with steady profits over shareholder value maximization.

Nevertheless, some researchers (e.g., Fauver and Fuerst 2006) present conflicting evidence, finding a value-enhancing role for employee representatives, given their production-related knowledge. This positive effect is especially apparent for firms in industries that demand higher coordination and specialized employee skills. We argue that the value-creating role of BLERs arises from their support for employees. Notably, the presence of BLERs (and their resulting effect on reducing the pay ratio) is positively associated with labor productivity and firm value. These findings are consistent with the inequity-aversion theory, which predicts that an optimal pay ratio enhances firm performance by achieving better workplace fairness and increasing labor productivity and firm value (Akerlof and Yellen 1990; Card et al. 2012).

Although we find clear evidence that BLERs suppress the compensation gap, our findings may be driven by omitted variables and, hence, subject to endogeneity issues. We employ a difference-in-differences (DiD) analysis to address this concern. In the DiD analysis, we use the adoption of a French security law in 2013⁹ as a quasi-natural experiment. Following the passage of this law, 33 French firms appointed BLERs for the first time. Thus, using these firms as a treatment group and a matched sample (using entropy matching) of control firms that were not subject to such a regulation as a control group, we confirm that BLERs reduce the pay ratios within firms.

Finally, we investigate a framework in which BLERs play a more significant role in affecting the pay gap and firm value. In particular, we examine the effect of BLER in countries that mandate single-tiered or double-tiered boards. From a bargaining power perspective, we argue that the presence of BLERs on the board should affect the pay gap and firm value differently, given the single- vs. double-tiered board structure. In a double-tiered setup, BLERs are part of the supervisory

board, whereas the CEO is a member of the executive board (the latter reporting to the former). Both the BLERs and CEO share a common board in a single or mixed board arrangement. It can be contended that employee representatives on the supervisory board may be actively involved in reducing the CEO–employee pay gap. Conversely, BLERs serving in companies with a single-board structure may be more prone to align with the CEO and advocate for increased pay for both parties. Following this argument, we show that BLERs on a one-tiered board form an alliance with the CEO and slightly increase the pay ratio. Furthermore, we show that the presence of BLERs in firms with a low pay ratio is value-creating only when the board structure is two-tiered, providing BLERs with more influence over the CEO.

This study contributes to the literature by demonstrating how employee representatives on boards affect the pay ratio between top executives and average workers. The extant literature has determined that the presence of BLERs provides several advantages: (1) BLERs facilitate communication between employees and directors (Freeman and Lazear 1994); (2) they have first-hand production knowledge (Fauver and Fuerst 2006); (3) they protect human capital investment (Werner and Zimmermann 2005); (4) they increase corporate capital investment and mitigate hold-up problems (Jäger, Schoefer, and Heining 2019). Our study extends this research by providing evidence of the BLERs' active roles in shaping the corporate compensation structure.

Our study is also related to ongoing research addressing the valuation effects of employee representatives. The efficient-compensation literature states that agents' (including employees') efforts are aligned with their pay level (e.g., Lazear and Rosen 1981; Akerlof and Yellen 1990). Extant labor economics literature (e.g., Charness and Kuhn 2007; Faleye, Reis, and Venkateswaran 2013; Breza, Kaur, and Shamdassani 2018) has shown that an organization's relative and absolute pay levels¹⁰ significantly influence employee production-related efforts and morale. Consistent with this line of research, we find that a compressed pay structure tends to increase firms' productivity and performance, as predicted by equity theory (Adams 1963). Our findings demonstrate that labor co-determination originates from egalitarian pay structures and improves workplace fairness, maximizing employee effort in the workplace.

The remainder of the paper is organized as follows. Section 2 presents the sample data, Section 3 presents the model, Section 4 provides the empirical results, and Section 5 concludes the study.

2 | Data

2.1 | Sample and Data Source

Our dataset comprises firm observations in 17 European countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Ukraine, and the United Kingdom) from 2001 to 2019.¹¹ We limit our sample to European countries. Although BLER has become more popular beyond European borders in the last decade, the concept is mainly European and

widespread across the continent, which is believed to be a unique characteristic of the European social model. We remove sample countries with fewer than 10 observations and winsorized the compensation data at 1% to remove outliers. Appendix B describes the background of the BLERs in Europe in more detail.

We collect data on pay ratios and compensation structures from Capital IQ and extract board-related information from BoardEx. Accounting data are from Global Compustat and other country-level variables are from the World Bank dataset. We construct our primary dependent variable, $Ln(PayRatio)$, as a natural logarithm of CEO compensation ($Ln(CEOPay)$) divided by the natural logarithm of firms' average employee wages ($Ln(AvgEmpWage)$) (both in USD). We use two measures of BLER variables as the main independent variables: a dummy variable ($BLERs$) equal 1 if a firm has a BLER and 0 otherwise and a measure of the intensity of BLERs equal the natural logarithm of one plus the total number of BLERs ($BLER Intensity$).

2.2 | Other Control Variables

Following the literature, we employ firm-level control variables that affect firms' pay ratios. Specifically, we use the natural logarithm of the number of employees to control for the size of a firm's labor force. We expect the pay ratio and CEO compensation to grow with increasing firm size (Tosi et al. 2000; Carpenter, Sanders, and Gregersen 2001). Other firm-level variables include *Leverage*, return on assets (*ROA*), *Sales Growth*, *Cash*, and *Firm Age*, which measure the firm's debt level, profitability, growth rate, level of cash holdings, and number of years it has been operating. We also control for board characteristics that contribute to pay ratio and firm value. *CEO Duality* is a dummy variable equal to 1 if the CEO is a board chairperson and 0 otherwise. We use this to control for the CEO's bargaining power to increase the pay gap. Other governance measures include $Ln(Boardsize)$, which equals the natural logarithm of board size, and *Independent Board*, which is a dummy variable equal to 1 if a firm has an independent board director and 0 otherwise.

We control for country-level variables that affect firms' compensation levels, including *Say on Pay Law*, *Inflation*, $Ln(GDPper)$, and *Common Law*, which are proxies for the country's legal origin. Many European countries have adopted SOP laws that allow shareholders to vote on CEO pay. Although the reported results of SOP laws on executive compensation in the literature are mixed, they have some effects on the compensation level of firms (Cai and Walkling 2011; Ferri and Maber 2013; Balsam et al. 2016; Correa and Lel 2016). Furthermore, we expect *Inflation* to be negatively related to the level of compensation across firms, whereas higher economic growth is associated with higher wages.

Panel A of Table 1 shows the average pay ratio and the number of BLERs per country. Countries such as Denmark, Sweden, Norway, Germany, and Austria have the highest average number of BLERs, whereas the United Kingdom, Ireland, Portugal, Spain, the Netherlands, and Italy have the lowest number of BLERs. Italy, Switzerland, and Germany have the highest pay ratios, with average CEO-to-worker compensation ratios of over 34. Ukraine, Norway, and Sweden have the lowest pay ratios,

TABLE 1 | Sample distribution by country and industry.

Panel A. Distribution of data by countries					
Country name	N	BLERs	PayRatio	CEOPay	AvgEmpWage
Austria	207	0.536	31.39	1,596,025	63,691
Belgium	314	0.016	23.56	984,844	96,542
Denmark	125	0.760	34.92	1,959,067	85,413
Finland	226	0.053	23.38	1,369,172	68,361
France	1671	0.122	31.02	1,255,826	80,101
Germany	1268	0.513	33.02	2,107,944	79,220
Ireland	375	0.000	28.59	1,313,162	80,582
Italy	449	0.000	48.33	1,824,778	75,176
Netherlands	499	0.000	22.47	1,461,578	83,070
Norway	522	0.550	17.60	909,950	91,472
Poland	157	0.096	23.30	570,951	29,993
Portugal	155	0.000	24.55	935,697	47,508
Spain	269	0.000	26.30	1,389,499	70,945
Sweden	562	0.582	19.00	1,216,752	81,944
Switzerland	509	0.004	32.78	2,399,920	103,129
Ukraine	10	0.000	16.34	538,993	36,229
United Kingdom	8022	0.002	20.49	981,626	75,969
Panel B. Univariate analyses					
	BLER = 1		BLER = 0		Mean difference
	Mean	SD	Mean	SD	
Firm level					
Ln (Sale)	21.766	1.754	19.464	2.382	2.302***
Firm Age	20.949	9.728	15.621	8.553	5.327***
Board Size	13.879	5.489	7.889	3.23	5.989***
Female Board Member	0.199	0.142	0.096	0.126	0.102***
One-tiered Board	0.200	0.400	0.675	0.468	−0.475***
Two-tiered Board	0.451	0.497	0.063	0.242	0.388***
Industry level					
Manufacturing	0.493	0.5	0.329	0.469	0.163***
HHI	0.366	0.24	0.256	0.225	0.109***

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

averaging less than 20. With some exceptions, Table 1 shows that countries with the highest representation of BLERs tend to have lower average pay ratios than other European countries. Appendix C provides distribution of the key variables based on their Industry following the Fama French (1997) industry classifications. Panel B of Table 1 presents the univariate test results for firms with and without these directors. The results indicate that firms with BLER are larger, older firms with larger board size and are more likely to have a female board member,

along with BLER. Moreover, their presence is more common in firms with two-tiered board structures in industries that are more labor intensive (manufacturing) and highly competitive (Herfindahl–Hirschman Index).

Table 2 presents the descriptive statistics of the sample. The table shows that 11.2% of firm-year observations have BLERs, translating into almost one employee representative per board. The average pay ratio is 24.54, with an average CEO paid USD

TABLE 2 | Descriptive statistics.

	N	Mean	Median	Std Dev	P25	P75
<i>BLER</i>	15,340	0.112	0	0.316	0	0
<i>BLER Intensity</i>	15,340	0.16	0	0.474	0	0
<i>PayRatio</i>	15,340	24.544	11.422	67.059	5.377	25.342
<i>Ln (PayRatio)</i>	15,340	2.442	2.436	1.219	1.682	3.232
<i>CEOPay (mil USD)</i>	15,340	1,230,456	738,005	1,362,239	382,951	1,480,144
<i>Ln (CEOPay)</i>	15,340	13.507	13.512	1.087	12.856	14.208
<i>AvgEmpWage (USD)</i>	15,340	78,004	65,592	55,063	47,062	90,115
<i>Ln (AvgEmpWage)</i>	15,340	11.065	11.091	0.66	10.759	11.409
<i>Ln (BLER^{Network})</i>	15,340	14.163	0	55.643	0	0
<i>Ln (BLER^{Tenure on board})</i>	15,340	0.533	0	1.819	0	0
<i>Employees</i>	15,340	11,629	1478	36,261	251	7219
<i>Firm Size</i>	15,340	7.149	7.26	2.352	5.474	8.861
<i>Leverage</i>	15,340	0.213	0.182	0.209	0.042	0.323
<i>ROA</i>	15,340	0.004	0.06	2.334	0.012	0.104
<i>Sales Growth</i>	15,340	0.615	0.062	25.053	−0.014	0.181
<i>Cash Holding</i>	15,340	0.12	0.068	0.148	0.027	0.149
<i>Firm Age</i>	15,340	16.219	15	8.817	9	22
<i>Boardsize</i>	15,340	8.562	8	4.027	6	10
<i>Ln (Boardsize)</i>	15,340	2.056	2.079	0.418	1.792	2.303
<i>Independent Board</i>	15,340	0.653	0.667	0.201	0.5	0.8
<i>One-tiered Board</i>	15,340	0.622	1	0.485	0	1
<i>Two-tiered Board</i>	15,340	0.106	0	0.308	0	0
<i>CEO Duality</i>	15,340	0.185	0	0.389	0	0
<i>Say on Pay Law</i>	15,340	0.432	0	0.495	0	1
<i>Common Law</i>	15,340	0.547	1	0.498	0	1
<i>Inflation</i>	15,340	1.736	1.688	1.154	1.104	2.446
<i>Ln (GDP)</i>	15,340	28.128	28.522	0.813	27.94	28.627

Note: This table presents the descriptive statistics for 15,340 firm-year sample firms across 17 European countries. *BLER* is a dummy variable that takes a value of 1 if a *BLER* sits on the board of directors and 0 otherwise. *BLER Intensity* is the log-transformed number of BLERs plus one to account for those with no directors. *PayRatio* is the ratio of CEO compensation (*CEOPay*) to average employee pay (*AvgEmpWage*). Full definitions of the variables are provided in Appendix A.

1.23 million and an average employee USD 78,004. The average firm had 11,629 employees, indicating that the sample may be slightly biased toward larger firms. The average board size was 8.6, and 65% of boards had an independent director. Definitions of all variables are provided in Appendix A.

3 | Empirical Model

3.1 | Model Specification

To examine the effects of BLERs on firms' pay ratios, we employ ordinary least squares (OLS) regressions, where the main dependent variable is the pay ratio (*PayRatio*), which equals CEO

compensation (*Ln (CEOPay)*) divided by average firm worker compensation (*Ln (AvgEmpWage)*). We use the following equations to examine these relationships.

$$\begin{aligned} \ln(\text{PayRatio})_{i,k,t} = & \alpha_i + \beta_1 \text{BLER}_{i,k,t-1} \\ & + \gamma \text{Controls}_{i,k,t-1} + \omega_i + \mu_t + \varepsilon_{k,t} \end{aligned} \quad (1)$$

$$\begin{aligned} \ln(\text{CEOPay})_{i,k,t} = & \alpha_i + \beta_1 \text{BLER}_{i,k,t-1} \\ & + \gamma \text{Controls}_{i,k,t-1} + \omega_i + \mu_t + \varepsilon_{k,t} \end{aligned} \quad (2)$$

$$\begin{aligned} \ln(\text{AvgEmpWage})_{i,k,t} = & \alpha_i + \beta_1 \text{BLER}_{i,k,t-1} + \gamma \text{Controls}_{i,k,t-1} \\ & + \omega_i + \mu_t + \varepsilon_{k,t} \end{aligned} \quad (3)$$

In these equations, *BLER* is equal to 1 if firm *i* in country *k* has an employee representative on the board in year *t* and 0 otherwise. In Equations (2) and (3), we measure the effects of BLERs on firms' CEO and average worker compensation, respectively. The right-hand variables are measured 1 year before the pay-ratio calculation to alleviate concerns that pay ratios and CEO compensation are driven by firms' past performance (Bertrand and Mullainathan 2001). Furthermore, we use firm-, board-, and country-level variables that may affect CEOs' and workers' pay ratios and compensation levels. All specifications include year-, industry-, and country-fixed effects to control for time-invariant factors that may impact our results.

4 | Results

4.1 | BLERs and Pay Structure in Firms

Table 3 shows the effect of BLERs on firms' pay ratios and their components, including CEO and average employee compensation levels. Column 1 indicates that firms with BLERs have pay ratios 18.8% lower than those without. Given an average pay ratio of 24.54, this result translates into a 4.61-unit reduction in pay ratio following the addition of BLERs. Column 2 shows that a decline in the pay ratio occurs because of decreasing CEO compensation. This effect is statistically significant and economically important, translating to a 10.77% decrease in CEO compensation. Given an average CEO compensation of USD 1.23 million, this coefficient indicates that, following the addition of BLERs, compensation is reduced by more than USD 132,520 annually. Moreover, Column 3 shows that the average worker compensation levels increased by 9.86% in the presence of BLERs. This further translates into about USD 8000 annual more compensation for workers.

Regarding BLER intensity, we find similar results in Columns 4–6 of Table 3, indicating that an increase in BLERs is associated with lower pay ratios, CEO compensation, and higher average worker compensation. Table 3 shows that BLERs provide more bargaining power to average employees in pay discussions, reducing the pay ratio between CEO and average workers. By controlling for other factors, firms with BLERs have lower pay ratios and CEO compensation and higher average worker compensation than those without BLERs. These results are consistent with the role of BLERs in increasing the fairness of firms' compensation structure and limiting entrenched CEOs' ability to design compensation structures for personal benefits.

4.2 | Which BLERs Reduce Pay Ratios More Effectively?

To determine the pay gap reduction of BLERs in firms, we investigate the moderating effects of BLERs on their roles in the following two sections. Specifically, we compare the cross-sectional effect of BLERs on the pay ratio when directors have a longer tenure and a larger network.

Although board members contribute differently to firms' compensation levels, some director characteristics enable them to negotiate compensation packages more effectively. Seidel,

Polzer, and Stewart (2000) examine the importance of social ties in minorities' wage negotiation skills. Other researchers have shown the effects of education, business, and social networks on board members' access to quality information and how this improves their decision-making abilities (Cohen, Frazzini, and Malloy 2008; Kuhnen 2009; Omer, Shelley, and Tice 2012; Larcker and Tayan 2015). Consistent with bargaining power theory, we expect BLERs with extensive networks to have more information regarding the evolution of executive remuneration and current CEO positions in different companies. This access increases their ability to negotiate better compensation packages with CEOs and to participate in designing a more efficient firm compensation structure.

Tenure can also help BLERs acquire greater bargaining power in boardrooms. Conventional wisdom indicates that directors with longer tenure understand a firm's business and history better, increasing their negotiation and advisory abilities (Pozen and Hamacher 2015). Some researchers find that longer tenured directors may participate in more board committee meetings, acquiring better knowledge of firm strategies, reducing information asymmetry between the board and CEO, and helping them perform advisory and monitoring duties simultaneously (Zenger and Lawrence 1989; Forbes and Milliken 1999; Castro et al. 2009). We anticipate that long-tenured BLERs better understand board duties, have more credibility on the board, and negotiate better employee compensation packages. To test the first sub-hypothesis regarding BLERs and pay ratios, we run the following analyses to investigate how these characteristics can help BLERs further reduce their pay ratios.

Table 4 shows the effects of networking and tenure on the role of BLERs in reducing pay ratios. Our variables of interest are *BLERs^{Network}* and *BLERs^{Tenure on board}*, which capture the average number of networks and the time that BLERs have spent on their boards. These variables capture the effectiveness of the BLERs roles on the board. These results are consistent with our hypotheses, indicating that BLERs with more extensive networks and longer tenures further reduce their pay ratios. This result is crucial for showing how better networking helps BLERs become informed representatives given their increased knowledge of firm pay structures other than their own. BLERs with longer tenures understand the different aspects of board duties better and have an advantage over CEOs in negotiating compensation packages.

Intriguingly, BLERs differ from other board members because, on average, they have less formal education and management experience (Waddington and Conchon 2017). Therefore, staying in a longer position and growing their network enables them to play a more effective role. Interestingly, the length of tenure is much more effective than network size in reducing the pay ratio, indicating the importance of BLERs' time spent in the director role.

4.3 | When Are BLERs Most Valuable?

We have shown that BLERs reduce pay ratios and CEO compensation, mitigating managerial power issues in firms. Next, we compare the size of the effects of these directors on the pay ratio reduction in firms with severe agency issues. Specifically,

TABLE 3 | BLERs and the pay ratio.

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Ln (PayRatio)</i>	<i>Ln (CEOPay)</i>	<i>Ln (AvgEmpWage)</i>	<i>Ln (PayRatio)</i>	<i>Ln (CEOPay)</i>	<i>Ln (AvgEmpWage)</i>
<i>BLER</i>	−0.208*** (−6.21)	−0.114*** (−3.63)	0.094*** (5.26)			
<i>BLER Intensity</i>				−0.189*** (−8.37)	−0.124*** (−5.78)	0.065*** (5.47)
<i>Firm Size</i>	0.354*** (68.52)	0.222*** (45.90)	−0.133*** (−40.60)	0.354*** (68.50)	0.221*** (45.91)	−0.132*** (−40.55)
<i>Leverage</i>	0.046 (1.03)	−0.012 (−0.32)	−0.058** (−2.08)	0.039 (0.88)	−0.018 (−0.48)	−0.057** (−2.06)
<i>ROA</i>	−0.005** (−2.06)	−0.003 (−1.30)	0.002*** (5.53)	−0.006** (−2.16)	−0.003 (−1.37)	0.002*** (5.64)
<i>Sales Growth</i>	−0.000 (−1.33)	0.000*** (3.56)	0.000*** (5.49)	−0.000 (−1.31)	0.000*** (3.52)	0.000*** (5.50)
<i>Cash Holding</i>	0.112** (2.25)	0.299*** (6.22)	0.187*** (5.23)	0.110** (2.20)	0.297*** (6.18)	0.188*** (5.26)
<i>Firm Age</i>	0.000 (0.43)	0.007*** (7.11)	0.007*** (10.45)	0.001 (0.60)	0.007*** (7.26)	0.007*** (10.39)
<i>Ln (Boardsize)</i>	0.222*** (8.13)	0.581*** (22.35)	0.358*** (21.80)	0.250*** (8.93)	0.603*** (22.73)	0.354*** (20.91)
<i>Independent Board</i>	0.332*** (5.74)	0.656*** (12.05)	0.324*** (8.38)	0.335*** (5.79)	0.660*** (12.13)	0.325*** (8.40)
<i>CEO Duality</i>	−0.006 (−0.25)	0.001 (0.03)	0.007 (0.58)	−0.002 (−0.08)	0.004 (0.18)	0.006 (0.51)
<i>Say on Pay Law</i>	−0.036 (−0.71)	−0.014 (−0.30)	0.022 (0.89)	−0.031 (−0.60)	−0.010 (−0.21)	0.021 (0.84)
<i>Common Law</i>	0.351*** (3.76)	0.740*** (8.58)	0.388*** (6.35)	0.326*** (3.51)	0.714*** (8.33)	0.387*** (6.34)
<i>Inflation</i>	−0.007 (−0.64)	−0.006 (−0.58)	0.001 (0.18)	−0.007 (−0.66)	−0.006 (−0.62)	0.001 (0.17)
<i>Ln (GDP)</i>	0.185 (1.53)	0.547*** (4.84)	0.361*** (5.50)	0.182 (1.50)	0.542*** (4.81)	0.361*** (5.49)
Constant	−5.800* (−1.83)	−4.783 (−1.62)	1.018 (0.59)	−5.758* (−1.82)	−4.705 (−1.59)	1.053 (0.61)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,340	15,340	15,340	15,340	15,340	15,340
Adj. <i>R</i> -squared	0.513	0.439	0.399	0.514	0.440	0.399

Note: This table presents OLS regression estimates, where the dependent variables are *Ln (PayRatio)*, *Ln (CEOPay)*, and *Ln (AvgEmpWage)*. *Ln (PayRatio)* is the ratio of the natural log of CEO compensation (*CEOPay*) divided by the natural log of average employee pay (*AvgEmpWage*). Appendix A presents the definitions of the control variables. All regressions include year-, industry-, and country-fixed effects, but their coefficients are omitted for brevity. Numbers in parentheses indicate *t*-statistics computed using robust standard errors.

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

TABLE 4 | BLER characteristics and pay ratio.

	(1)	(2)
	<i>Ln (PayRatio)</i>	
<i>Ln (BLER^{Network})</i>	−0.001*** (−6.24)	
<i>Ln (BLER^{Tenure on board})</i>		−0.017*** (−3.28)
<i>Firm Size</i>	0.356*** (68.52)	0.354*** (68.30)
<i>Leverage</i>	0.053 (1.19)	0.055 (1.23)
<i>ROA</i>	−0.005** (−2.06)	−0.005** (−1.98)
<i>Sales Growth</i>	−0.000 (−1.19)	−0.000 (−1.27)
<i>Cash Holding</i>	0.122** (2.45)	0.110** (2.21)
<i>Firm Age</i>	0.000 (0.46)	0.000 (0.46)
<i>Ln (Boardsize)</i>	0.209*** (7.69)	0.194*** (7.14)
<i>Independent Board</i>	0.314*** (5.44)	0.316*** (5.47)
<i>CEO Duality</i>	−0.012 (−0.46)	−0.010 (−0.39)
<i>Say on Pay Law</i>	−0.033 (−0.65)	−0.041 (−0.80)
<i>Common Law</i>	0.436*** (4.77)	0.394*** (4.22)
<i>Inflation</i>	−0.006 (−0.56)	−0.005 (−0.51)
<i>Ln (GDP)</i>	0.206* (1.70)	0.200* (1.65)
Constant	−6.403** (−2.02)	−6.158* (−1.94)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Country FE	Yes	Yes
Observations	15,340	15,340
Adj. R-squared	0.513	0.512

Note: This table presents OLS regression estimates, where the dependent variable is *Ln (PayRatio)*, the ratio of the natural log of CEO compensation (*CEOPay*) to the natural log of average employee pay (*AvgEmpWage*). The independent variables are *BLER^{Network}* and *BLER^{Tenure on board}*, which represent the number of BLER networks and years of tenure in the role, respectively. Appendix A presents the definitions of the other control variables. All regressions include year-, industry-, and country-fixed effects, but their coefficients are omitted for brevity. Numbers in parentheses indicate *t*-statistics computed using robust standard errors.

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

we investigate the governance role of BLERs in reducing pay ratios in situations involving rent-extracting CEOs who design firm compensation structures for their benefit. The managerial power hypothesis describes the pay ratio as a symptom of agency problems arising from a CEO controlling the pay structure rather than designing it efficiently (Cremers and Palia 2011). Other research shows that CEOs' rent-seeking behavior is a factor behind excessive compensation, contributing to severe agency issues (Bebchuk and Fried 2003; Bebchuk, Cremers, and Peyer 2011).

For this purpose, we run the subsample analyses presented in Table 5, which divides the sample based on the country-level variables of interest. In Columns 1–4, we divide the sample into countries with high and low governance scores using World Bank measures. Specifically, the variable *Rule of Law* represents the time-varying country-level index measuring the strength and fairness of the legal system and its capacity to provide effective protection for individuals and firms. Similarly, we employ *Accountability* as another country-level governance index to measure citizens' freedom of expression and government participation. Both variables are constructed from worldwide governance indicators prepared by the World Bank. We expect CEOs to have more power to take advantage of their role in compensation settings in countries with low *Rule of Law* and *Accountability* levels. Therefore, BLERs' influence on the pay ratio reduction is more pronounced in these countries. Consistent with our expectations, the results indicate that the role of BLER in reducing the pay ratio is significantly larger when the firm is located in a country with low rule of law and accountability scores.

Next, Columns 5 and 6 of Table 5 investigate the role of BLERs in protecting employees in countries with less stringent regulations. For this purpose, we use the Employee Protection Legislation (EPL)¹² measure created by the OECD. The EPL measure has been used extensively in literature to measure country-level employee protection laws at the country level (e.g., Alimov 2015; Subramanian and Megginson 2018; Karpuz, Kim, and Ozkan 2020). Employment protection legislation (EPL) proxies for the law protecting against employee dismissal at the individual and collective levels. We argue that if BLERs protect employees' rights using their bargaining power and strive for fairer compensation, their presence could alleviate the lack of law-protecting employees in countries with lower EPL scores. The results in Columns 5 and 6 of Table 5 confirm our expectations, indicating that, compared to countries with an EPL higher than the median level, the presence of BLERs reduces the pay ratio significantly more in countries with a lower EPL. This result indicates that in the absence of strong laws protecting employees, the presence of BLERs provides more leverage to employees toward their employers.

Next, we discuss countries' cultural values and how they shape the bargaining power of BLER to reduce firms' pay ratios. Academic research has extensively examined the influence of culture on governance in nations and power dynamics between CEOs and boards. Pennings (1993) explores executive compensation perceptions among managers in the United States, France, and the Netherlands. His findings indicate that variances in

TABLE 5 | Subsample analyses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Rule of law		Accountability		EPL		Culture–Power distance		Culture–Individualism	
	High	Low	High	Low	High	Low	High	Low	High	Low
BLERs	−0.148*** (−3.39)	−0.268*** (−5.19)	−0.140*** (−3.76)	−0.331*** (−4.46)	−0.197*** (−5.80)	−0.986*** (−5.84)	−0.247*** (−5.71)	−0.125** (−2.32)	−0.509*** (−6.16)	−0.183*** (−4.99)
	H0: β(1) = β(2)		H0: β(3) = β(4)		H0: β(5) = β(6)		H0: β(7) = β(8)		H0: β(9) = β(10)	
	(0.070)		(0.020)		(0.000)		(0.070)		(0.000)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8646	6694	8062	7278	13,233	2107	13,323	2017	8032	7308
Adj. R-squared	0.573	0.453	0.528	0.504	0.496	0.639	0.520	0.486	0.625	0.413

Note: This table presents the subsample analysis estimates. The dependent variable is *Ln (PayRatio)*, the ratio of the natural log of CEO compensation (*CEOPay*) to the natural log of average employee pay (*AvgEmpWage*). *Rule of Law* is a time-varying country-level governance index that measures how effectively laws and contracts are followed. *Accountability* is a time-varying, country-level governance index that measures how freely a country's citizens can participate in selecting their government and freedom of expression. Both variables are constructed using the World Bank's Worldwide Governance Indicator. *EPL* is the OECD's employment protection legislation and represents the strength of laws protecting employees from termination in each country. Cultural variables (*Power Distance* and *Individualism*) represent the degree to which less powerful societies accept that power is distributed unequally and their degree of independence, respectively. The high and low categories for each measure indicate whether the countries are above or below the median score in that category, respectively. Appendix A presents the definitions of the other control variables. All regressions include year-, industry-, and country-fixed effects, but their coefficients are omitted for brevity. Numbers in parentheses indicate *t*-statistics computed using robust standard errors. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

TABLE 6 | Bargaining power of BLERs and pay ratio.

	(1) <i>Ln (PayRatio)</i>	(2) <i>Ln (CEOPay)</i>	(3) <i>Ln (AvgWage Employee)</i>
<i>#BLER/Boardsize-BIN 2</i>	-0.157*** (0.000)	-0.061* (0.098)	0.096*** (0.000)
<i>#BLER/Boardsize-BIN 3</i>	-0.305*** (0.000)	-0.203*** (0.000)	0.102*** (0.000)
<i>#BLER/Boardsize-BIN 4</i>	-0.505*** (0.000)	-0.371*** (0.000)	0.135*** (0.000)
<i>Ln (Employees)</i>	0.353*** (0.000)	0.221*** (0.000)	-0.132*** (0.000)
<i>Leverage</i>	0.039 (0.385)	-0.017 (0.659)	-0.056** (0.046)
<i>ROA</i>	-0.006** (0.035)	-0.003 (0.178)	0.002*** (0.000)
<i>Sales Growth</i>	-0.000 (0.199)	0.000*** (0.000)	0.000*** (0.000)
<i>Cash Holding</i>	0.111** (0.027)	0.299*** (0.000)	0.188*** (0.000)
<i>Firm Age</i>	0.001 (0.617)	0.007*** (0.000)	0.007*** (0.000)
<i>Ln (Boardsize)</i>	0.232*** (0.000)	0.590*** (0.000)	0.358*** (0.000)
<i>Independent Board</i>	0.344*** (0.000)	0.667*** (0.000)	0.323*** (0.000)
<i>CEO Duality</i>	-0.003 (0.912)	0.004 (0.870)	0.007 (0.584)
<i>Say on Pay Law</i>	-0.036 (0.477)	-0.015 (0.754)	0.022 (0.388)
<i>Common Law</i>	0.390*** (0.000)	0.775*** (0.000)	0.385*** (0.000)
<i>Inflation</i>	-0.005 (0.617)	-0.004 (0.646)	0.001 (0.888)
<i>Ln (GDP)</i>	0.203* (0.094)	0.559*** (0.000)	0.357*** (0.000)
Constant	-6.332** (0.046)	-5.181* (0.081)	1.151 (0.505)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Observations	15,336	15,336	15,337

TABLE 6 | (Continued)

	(1) <i>Ln (PayRatio)</i>	(2) <i>Ln (CEOPay)</i>	(3) <i>Ln (AvgWage Employee)</i>
Adj. R-squared	0.514	0.440	0.399

Note: This table presents OLS regression estimates, where the dependent variables are *Ln (PayRatio)*, *Ln (CEOPay)*, and *Ln (AvgEmpWage)*. *Ln (PayRatio)* is the ratio of the natural log of CEO compensation (*CEOPay*) to the natural log of average employee pay (*AvgEmpWage*). *BLER/Boardsize-BIN#* represents the BLER intensity of the board. Bin 1 is omitted because it is one of the four categories of the dummy variable and is the base for comparison with other bins. Bin 1 represents firms with no BLER on the board. Bins 2, 3, and 4 represent firms in which BLERs comprise approximately 12.5%, 27.8%, and 36.8% of the board, respectively. Appendix A presents the definitions of the other control variables. All regressions include year-, industry-, and country-fixed effects, but their coefficients are omitted for brevity. Numbers in parentheses indicate *t*-statistics computed using robust standard errors.

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

reward systems and perceptions in these nations can be partly attributed to cultural distinctions.

Hofstede's (1980) key dimension of national culture, known as power distance, pertains to variations in status and the acceptance of inequality. In nations with a high power distance, stakeholders are less inclined to challenge CEOs and their decision-making rationale, granting CEOs more discretion (Crossland and Hambrick 2011). Research indicates that countries with high power distance exhibit higher CEO compensation (Tosi and Greckhamer 2004), greater CEO/worker pay gaps (Tosi and Greckhamer 2004), lower employee ownership plans (Schuler and Rogovsky 1998), and overall larger wage disparities (Gomez-Mejia and Welbourne 1991; Jackofsky, Slocum, and McQuaid 1988). Therefore, we expect that the presence of a BLER on the board reduces the pay ratio in countries with a higher power distance than in those with a lower power distance. The results in Columns 7 and 8 of Table 5 confirm this hypothesis and show that, compared to countries with lower power distance scores, the presence of BLER reduces the pay ratio almost twice as much when the firm is located in a country with a high power distance score.

Next, we examine the aspect of cultural value, often regarded as the most significant, individualism (vs. collectivism), which has been extensively discussed in the literature (e.g., Aguinis and Henle 2003). In such countries as the United States and the United Kingdom, where culture leans toward individualism, there is a greater emphasis on individual needs over the needs of a group or organization (Hofstede 1980, 2001). Moreover, according to Crossland and Hambrick (2011), nations with high individualism grant CEOs more opportunities for decision-making. Regarding compensation theory, countries with high individualism tend to promote characteristics resembling tournament theory, fostering a competitive rather than cooperative environment.

In line with this notion, Tosi and Greckhamer (2004) observe higher CEO compensation in countries with high individualistic cultural scores. We expect BLER to play a more important role in reducing the pay ratio in countries with high individualism scores. The results in Columns 9 and 10 of Table 5 confirm our expectations that the effect of BLER's presence in reducing the pay ratio is almost five times larger when the firm is located in a highly individualistic country.

Table 5 presents results consistent with our expectation that the presence of BLERs reduces pay ratios more effectively in firms located in countries where the agency issue, *ex ante*, is more severe and the law (or lack of) provides CEOs with more power to affect the compensation dynamics in firms. Specifically, the presence of BLERs reduces pay ratios when a country's governance practices are weaker, when there is less legal protection supporting employees, and when the country's culture provides more discretion to the CEOs. These results further confirm the governance and regulatory roles of BLERs.

Next, we examine the effectiveness of BLERs following an increase in their relative number on the board. We believe that the BLERs' negotiating and bargaining power depends on their relative numbers on the board. To test this hypothesis, we create four bins according to the ratio of *BLERs* to *Boardsize*. In the first bin, where most of the observations fall, the ratio is 0. We create three other bins following the distribution of observations in the *#BLERs/Boardsize* measure. In particular, we assign observations to bins 2, 3, and 4, following the distributions in the 90th, 95th, and 99th percentiles. Each bin represents an average of 12.5%, 27.8%, and 36.8% of the board filled by BLERs, respectively. We expect that the effect of BLERs in reducing the pay ratio increases from the first bin to the fourth.

The results presented in Table 6 confirm these findings. The *BIN¹³* variables are dummies representing the category defined based on the portion of the board that comprises BLERs. In particular, the results indicate that compared to the baseline group with no BLERs, in firms that are in bins 2, 3, and 4, the pay ratios are 15.7%, 30.5%, and 50.5% less, respectively. We observe the same trend in CEO compensation and positive and growing coefficients for average worker wages. These results are important because they confirm the bargaining power of BLERs and have a relative magnitude. In particular, having 36.8% of the board filled by BLERs, compared to 12.5%, triples the effect on reducing firms' pay ratio.¹⁴

4.4 | Do BLERs Create Value?

Next, we test pay structure value creation following the addition of BLERs. We show the results in Table 7, where the dependent variables are firm value, measured by the natural log of their stock market-to-book ratio and labor productivity measured by the natural log of sales by the number of employees (e.g., Koch and McGrath 1996; Oldford and Otchere 2016; Kim, Kim, and

TABLE 7 | BLERs, pay ratio, and firm value.

	(1)	(2)
	<i>Firm value</i>	<i>Labor productivity</i>
<i>LowPayRatio</i> × <i>BLER</i>	0.066** (0.024)	0.136** (0.039)
<i>BLER</i>	−0.061*** (0.003)	−0.305*** (0.000)
<i>LowPayRatio</i>	−0.079*** (0.000)	0.065* (0.067)
<i>Firm Size</i>	0.016*** (0.000)	0.019 (0.173)
<i>Leverage</i>	−0.094** (0.031)	0.214** (0.042)
<i>ROA</i>	0.003* (0.082)	0.005 (0.669)
<i>Sales Growth</i>	0.000*** (0.000)	−0.003*** (0.000)
<i>Cash Holding</i>	0.755*** (0.000)	−1.307*** (0.000)
<i>Ln (Boardsize)</i>	0.118*** (0.000)	0.459*** (0.000)
<i>Independent Board</i>	−0.124*** (0.002)	0.219* (0.053)
<i>Inflation</i>	0.026*** (0.010)	0.044** (0.016)
<i>Ln (GDP)</i>	0.030 (0.695)	−0.095 (0.662)
Constant	0.071 (0.972)	13.689** (0.019)
Year FE	Yes	Yes
Industry FE	Yes	Yes
Country FE	Yes	Yes
Observations	13,523	12,630
Adj. R-squared	0.154	0.405

Note: This table presents OLS regression estimates, where the dependent variables are *firm value* ($\ln(\text{Market to Book ratio})$) and *Labor Productivity* $\ln(\text{Sales/Number of Employees})$. *LowPayRatio* equals 1 if the firm's pay ratio is less than the median and 0 otherwise. Appendix A presents the definitions of the other control variables. All regressions include year-, industry-, and country-fixed effects, but their coefficients are omitted for brevity. Numbers in parentheses indicate *t*-statistics computed using robust standard errors.

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Kim 2020; Orzes et al. 2020). The variable of interest in Table 7 is the interaction term between the presence of BLERs and lower pay ratio (*LowPayRatio* × *BLERs*). The results in Columns 1 and 2 of Table 7 confirm the value-creating role of BLERs, where their presence is associated with an approximately 7% higher share value and 14% higher labor productivity. The results for labor productivity need to be interpreted with caution because the total effect (given the coefficients of *LowPayRatio* × *BLER* and *BLER*) sums to −0.169. This indicates that although the effect of BLER in isolation is associated with lower labor productivity, its positive impact on pay fairness partially mitigates this impact. Consistent with equity theory, this result indicates that reducing pay ratios after adding BLERs positively affects employee morale and job satisfaction, increasing labor productivity and firm performance.

Moreover, the results are consistent with inequity-aversion theory, which predicts that the optimal pay ratio enhances firm performance through better workplace fairness, which increases labor productivity and firm value (Akerlof and Yellen 1990). Although the results for the interaction term between *BLER* and *Low Pay Ratio* indicate higher firm value and labor productivity, these indicator values (*BLER* and *LowPayRatio*) show a negative relationship with firm value and labor productivity (except for *LowPayRatio*, which is positively related to *Labor Productivity*), suggesting that BLERs create firm value and increase productivity by reducing pay ratios in firms.

4.5 | Identification Strategies

In this subsection, we use a DiD analysis to mitigate endogeneity concerns in our results. We use a sample of French firms to measure the effectiveness of the legislation passed in 2013,¹⁵ which ensures the presence of BLERs on boards. Specifically, we use the 33 French firms that appointed BLERs to their boards for the first time as the treatment group and peer firms in our sample with no BLERs but the same size, industry, and age as the control group.

We create a matching control group using the entropy-balancing technique proposed by Hainmueller and Xu (2013). This matching method is based on covariate balancing between the treatment and control firms, and, unlike the propensity score matching (PSM) method, it enhances imbalanced covariates after matching. The entropy method modifies the weights of the control sample until the covariates of the two samples (treatment and control) are equal. Compared with PSM, the advantage of this technique for our sample is that it avoids losing any observations in the control group. King et al. (2011) find this method to be more powerful than PSM and that the lack of creation of random variables in this method is optimal. King and Nielsen (2019) find that matching certain firm attributes is advantageous compared to PSM. We match the control variables using the first moment (mean) to find matching firms for the treated (French) observations using the entire sample.

TABLE 8 | Difference-in-differences [2011–2015].

	(1) <i>Ln (PayRatio)</i>	(2) <i>Ln (CEOPay)</i>	(3) <i>Ln (AvgEmpWage)</i>
<i>Treated × Post</i>	−0.988*** (0.000)	−0.817*** (0.001)	0.170* (0.059)
<i>Treated</i>	0.093 (0.663)	0.205 (0.205)	0.113 (0.317)
<i>Post</i>	0.021 (0.944)	−0.003 (0.990)	−0.024 (0.877)
<i>Firm Size</i>	0.448*** (0.000)	0.268*** (0.000)	−0.179*** (0.000)
<i>Leverage</i>	−0.465 (0.349)	−0.546 (0.168)	−0.080 (0.735)
<i>ROA</i>	1.273*** (0.007)	0.909** (0.049)	−0.364* (0.098)
<i>Sales Growth</i>	0.048 (0.621)	0.063 (0.354)	0.015 (0.673)
<i>Cash Holding</i>	2.757*** (0.000)	1.986*** (0.004)	−0.771** (0.027)
<i>Firm Age</i>	−0.000 (0.979)	0.015** (0.019)	0.015*** (0.000)
<i>Ln (Boardsize)</i>	0.305* (0.050)	0.665*** (0.000)	0.360*** (0.000)
<i>Independent Board</i>	0.857** (0.049)	0.567* (0.089)	−0.290 (0.277)
<i>CEO Duality</i>	−0.190* (0.090)	−0.264** (0.013)	−0.073 (0.131)
<i>Say on Pay Law</i>	−0.245 (0.531)	−0.241 (0.471)	0.003 (0.986)
<i>Common Law</i>	−1.164 (0.389)	−0.365 (0.762)	0.799 (0.138)
<i>Inflation</i>	−0.053 (0.640)	−0.039 (0.706)	0.014 (0.760)
<i>Ln (GDP)</i>	−1.374 (0.545)	−0.893 (0.666)	0.482 (0.568)
Constant	34.782 (0.567)	33.433 (0.545)	−1.349 (0.952)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Observations	3905	3905	3905

TABLE 8 | (Continued)

	(1) <i>Ln (PayRatio)</i>	(2) <i>Ln (CEOPay)</i>	(3) <i>Ln (AvgEmpWage)</i>
Adj. R-squared	0.544	0.539	0.456

Note: This table presents the difference-in-differences estimation results to examine the effects of the presence of BLERs on firms' compensation using the sample of French firms that appointed BLERs (*Treated*) for the first time in 2013 (*Post*) as the treatment group and other matched firms as control groups. The dependent variables are *Ln (PayRatio)*, *Ln (CEOPay)*, and *Ln (AvgEmpWage)*. *Ln (PayRatio)* is the ratio of the natural log of CEO compensation (*CEOPay*) to the natural log of average employee pay (*AvgEmpWage*). The sample includes 2 years before and after the implementation of the law (2011–2015). Appendix A presents the definitions of the other control variables. All regressions include year-, industry-, and country-fixed effects, but their coefficients are omitted for brevity. Numbers in parentheses indicate *t*-statistics computed using robust standard errors.

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 8 shows the DiD analyses using the matched sample for two 2 years before and after French firms' implementation of the law. The variable *Post* equals 1 if the fiscal years are 2013, 2014, and 2015 and 0 if the years are 2011 and 2012. Our variable of interest, *Treated* × *Post*, captures the law's effects on firms' compensation structures in the presence of BLERs. The results in Columns 1 and 2 are similar to our previous findings and indicate that French firms that appointed BLERs for the first time following the enforcement of the “Sociétés Anonymes” law exhibit a lower pay ratio of 62% compared to their matched firms without BLERs. Moreover, the presence of BLERs is associated with a 55% reduction in CEO compensation and a 19% higher average employee salary. Overall, the results in Table 8 demonstrate the critical role of BLER in mitigating pay ratios and CEO compensation levels.

4.6 | Board Structure and the Role of BLERs

Several European countries allow or require companies to adopt single- or two-tiered board systems. In the two-tiered system, there is an executive board comprising senior management and the CEO and a supervisory board comprising non-management directors and a non-management chair. The supervisory board oversees the executive board's work. In a two-tiered system, BLERs often hold seats on supervisory boards. Another option is a mixed system that combines executive and non-executive boards. Following Gelter and Siems (2019) and publications by the European Voice of Board Members (ecoDa), we identify countries that have mandated one- or two-tiered boards for the firms incorporated in the country.

Different organizational structures may create separate landscapes for negotiations and governance. This leads to BLERs having varying levels of influence on decisions regarding CEO and employee compensation. Whether BLERs can effectively reduce the pay gap may depend on whether they are appointed to a board with a CEO in a single-tiered system or on a supervisory board with non-management directors in a two-tiered system. On a single-tiered board, there may be a higher susceptibility to CEO influence and a reduced impact from non-management and BLERs.

Therefore, it is necessary to compare companies with one-tiered boards to those with two-tiered boards to understand

how BLERs impact the pay gap. Thus far, it has been argued that BLERs can reduce the pay gap. However, the executive-worker-alliance hypothesis (Pagano and Volpin 2005) predicts the possibility of an alliance between BLERs and CEO. BLERs on a supervisory board may be more actively involved in reducing the CEO–average employee pay gap, whereas those in a single-board structure may be more inclined to collaborate with the CEO to increase the pay gap in exchange for job security for employees. Following this argument, we expect to observe the effects of BLERs on reducing pay ratios and increasing firm value in firms with two-tiered board structures.

The results in Panels A and B of Table 9 provide evidence supporting our hypotheses. Panel A shows that the reducing effect of BLERs on the pay ratio and CEO compensation exists only in countries that mandate two-tiered boards (albeit not statistically significant). However, for countries with one-tiered board structures, we observe a higher pay ratio and CEO compensation in the presence of BLERs. In particular, the presence of BLERs increased the pay ratio and CEO compensation by 34.85% and 23.74%, respectively. We observe a positive effect of BLERs on average employee wages in both the single- and two-tiered structures. Panel B illustrates the value-creating role of BLERs in firms with different board structures.

The results indicate that the presence of BLERs in firms with low pay ratios creates value only when these directors sit on a supervisory board. Furthermore, the results in Column 2 show the opposite effect when BLERs sit on a single-tiered board. The results in Table 9 are important because they provide evidence that a two-tiered board environment provides better grounds for the BLER to affect firm value and when sitting on a single-tiered board, BLERs are not effective in reducing the pay ratio and increasing firm value.

4.7 | Other Sensitivity Analyses

The reducing effect of BLERs on the pay ratio could be due to factors, such as the presence of unions at the firm level. To distinguish the effects of BLERs from those of unions, we controlled for the effect of the union in our baseline regression and found similar results (Table 3). Moreover, as our sample comprises 52% British firms, we run sensitivity analyses on the sample,

TABLE 9 | Board structure, BLER, and pay ratio.

Panel A						
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Ln (PayRatio)</i>		<i>Ln (CEOPay)</i>		<i>Ln (Avg Wage employees)</i>	
<i>Two-tiered*BLER/One-tiered*BLER</i>	−0.020 (−0.33)	0.299*** (4.02)	−0.015 (−0.27)	0.213*** (2.82)	0.005 (0.14)	−0.086** (−2.45)
<i>Two-tiered/One-tiered</i>	−1.215*** (−5.01)	−0.418*** (−4.79)	−0.711*** (−3.82)	−0.156* (−1.79)	0.504*** (3.48)	0.261*** (5.25)
<i>BLER</i>	−0.200*** (−4.56)	−0.262*** (−6.98)	−0.108*** (−2.66)	−0.153*** (−4.43)	0.092*** (4.16)	0.110*** (5.41)
<i>Firm Size</i>	0.354*** (68.23)	0.354*** (68.46)	0.222*** (45.76)	0.221*** (45.82)	−0.133*** (−40.53)	−0.132*** (−40.55)
<i>Leverage</i>	0.046 (1.03)	0.044 (0.98)	−0.012 (−0.32)	−0.013 (−0.36)	−0.058** (−2.08)	−0.057** (−2.06)
<i>ROA</i>	−0.005** (−2.06)	−0.005** (−2.06)	−0.003 (−1.30)	−0.003 (−1.30)	0.002*** (5.53)	0.002*** (5.53)
<i>Sales Growth</i>	−0.000 (−1.33)	−0.000 (−1.16)	0.000*** (3.56)	0.000*** (3.48)	0.000*** (5.49)	0.000*** (5.51)
<i>Cash Holding</i>	0.112** (2.24)	0.114** (2.28)	0.299*** (6.21)	0.300*** (6.23)	0.187*** (5.24)	0.186*** (5.22)
<i>Firm Age</i>	0.000 (0.45)	0.001 (0.60)	0.007*** (7.12)	0.007*** (7.24)	0.007*** (10.49)	0.007*** (10.34)
<i>Ln (Boardsize)</i>	0.223*** (8.09)	0.225*** (8.23)	0.581*** (22.26)	0.583*** (22.40)	0.358*** (21.60)	0.357*** (21.74)
<i>Independent Board</i>	0.332*** (5.74)	0.339*** (5.86)	0.656*** (12.05)	0.661*** (12.14)	0.324*** (8.37)	0.322*** (8.32)
<i>CEO Duality</i>	−0.006 (−0.26)	−0.005 (−0.19)	0.001 (0.03)	0.002 (0.08)	0.007 (0.58)	0.007 (0.54)
<i>Say on Pay Law</i>	−0.036 (−0.71)	−0.038 (−0.74)	−0.014 (−0.30)	−0.015 (−0.32)	0.022 (0.89)	0.023 (0.90)
<i>Common Law</i>	−0.870*** (−3.85)	0.743*** (6.82)	0.024 (0.15)	0.878*** (8.45)	0.894*** (6.45)	0.134** (2.19)
<i>Inflation</i>	−0.007 (−0.64)	−0.007 (−0.68)	−0.006 (−0.58)	−0.006 (−0.62)	0.001 (0.18)	0.001 (0.21)
<i>Ln (GDP)</i>	0.185 (1.53)	0.186 (1.54)	0.547*** (4.84)	0.547*** (4.85)	0.361*** (5.50)	0.361*** (5.50)
Constant	−4.581 (−1.49)	−5.825* (−1.84)	−4.068 (−1.42)	−4.800 (−1.62)	0.513 (0.31)	1.025 (0.60)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

(Continues)

TABLE 9 | (Continued)

Panel A						
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Ln (PayRatio)</i>		<i>Ln (CEOPay)</i>		<i>Ln (Avg Wage employees)</i>	
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,340	15,340	15,340	15,340	15,340	15,340
Adj. R-squared	0.513	0.514	0.439	0.440	0.399	0.399
Panel B						
	(1)	(2)	(3)	(4)		
	<i>MB (t + 1)</i>		<i>Labor productivity</i>			
<i>LowPayRatio*BLERs*Two-tiered</i>	0.119** (0.021)		0.078 (0.534)			
<i>LowPayRatio*BLERs*One-tiered</i>		−0.158*** (0.002)			−0.129 (0.517)	
<i>LowPayRatio*BLERs</i>	0.031 (0.379)	0.105*** (0.002)	0.109 (0.156)		0.153** (0.029)	
<i>Two-tiered</i>	0.951*** (0.000)		1.318 (0.149)			
<i>One-tiered</i>		0.286*** (0.000)			2.524*** (0.000)	
<i>BLER</i>	−0.059*** (0.003)	−0.063*** (0.002)	−0.304*** (0.000)		−0.306*** (0.000)	
<i>LowPayRatio</i>	−0.080*** (0.000)	−0.080*** (0.000)	0.064* (0.068)		0.064* (0.068)	
<i>Firm Size</i>	0.016*** (0.000)	0.016*** (0.000)	0.019 (0.175)		0.019 (0.175)	
<i>Leverage</i>	−0.094** (0.031)	−0.094** (0.031)	0.214** (0.042)		0.214** (0.042)	
<i>ROA</i>	0.003* (0.082)	0.003* (0.082)	0.005 (0.669)		0.005 (0.669)	
<i>Sales Growth</i>	0.000*** (0.000)	0.000*** (0.000)	−0.003*** (0.000)		−0.003*** (0.000)	
<i>Cash Holding</i>	0.756*** (0.000)	0.754*** (0.000)	−1.307*** (0.000)		−1.307*** (0.000)	
<i>Ln (Boardsize)</i>	0.119*** (0.000)	0.119*** (0.000)	0.459*** (0.000)		0.459*** (0.000)	
<i>Independent Board</i>	−0.125*** (0.002)	−0.125*** (0.002)	0.219* (0.053)		0.219* (0.054)	

(Continues)

TABLE 9 | (Continued)

Panel B				
	(1)	(2)	(3)	(4)
	<i>MB (t + 1)</i>		<i>Labor productivity</i>	
<i>Inflation</i>	0.025*** (0.010)	0.025*** (0.010)	0.044** (0.016)	0.044** (0.016)
<i>Ln (GDP)</i>	0.028 (0.713)	0.026 (0.732)	−0.096 (0.658)	−0.096 (0.658)
Constant	−0.841 (0.657)	0.169 (0.932)	12.405** (0.032)	13.723** (0.019)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Observations	13,523	13,523	12,630	12,630
Adj. R-squared	0.154	0.154	0.405	0.405

Note: Panel A presents the OLS regression estimates, where the dependent variables are *Ln (PayRatio)*, *Ln (CEOPay)*, and *Ln (AvgEmpWage)*. *Ln (PayRatio)* is the ratio of the natural log of CEO compensation (*CEOPay*) to the natural log of average employee pay (*AvgEmpWage*). *Two-tiered (One-tiered)* is a dummy equal to 1 if a country has a two-tiered (one-tiered) board mandate in place and 0 otherwise. Panel B presents OLS regression estimates, where the dependent variables are firm value (*Ln (Market to Book ratio)*) and labor productivity *Ln (Sales/Number of Employees)*. *LowPayRatio* equals 1 if the firm's pay ratio is less than the median and 0 otherwise. *Two-tiered (One-tiered)* is a dummy variable equal to 1 if a country has a two-tiered (one-tiered) board mandate in place and 0 otherwise. Appendix A presents the definitions of the other control variables. All regressions include year-, industry-, and country-fixed effects, but their coefficients are omitted for brevity. Numbers in parentheses indicate t-statistics computed using robust standard errors.

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

excluding British firms. We found results in an unreported table very similar to those of our baseline regression.

5 | Conclusion

This study investigates the role of BLERs in the pay ratio between CEOs and average workers in a sample of firms in 17 European countries. Consistent with BLERs' role in safeguarding employee welfare and reducing agency issues via active monitoring, they reduce pay ratios and CEO compensation in firms, increasing average worker compensation levels. This effect is more pronounced when BLERs have greater bargaining power through more board seats, more extensive networks, and longer tenure.

Our subsample analyses confirm that the effects of BLERs on pay-ratio reduction are more robust when there is a higher risk of overpaying CEOs. Further analyses show that the role of BLERs in reducing pay ratios is more significant in countries that mandate two-tiered boards, and in those with larger *Power Distance* and *Individualism* cultures. In these countries, stakeholders are less inclined to challenge CEOs, and greater emphasis is placed on individual rather than group needs.

Although we provide robust evidence on the role of BLERs in the pay ratio, a limitation of our study is related to data availability. Our results may be biased toward the sample of firms that report average employee wages, and these firms, on average, might have a higher remuneration level than others.

Data Availability Statement

The data that support the findings of this study are available from <https://wrds-www.wharton.upenn.edu/pages/about/data-vendors/>. Restrictions apply to the availability of these data, which were used under license for this study. Data are available from <https://wrds-www.wharton.upenn.edu/pages/about/data-vendors/> with the permission of <https://wrds-www.wharton.upenn.edu/pages/about/data-vendors/>.

Endnotes

¹ We use the terms “pay gap” and “pay ratio” interchangeably.

² This study is similar to works that show a negative relationship between union power and CEO compensation (e.g., DeAngelo and DeAngelo 1991; Huang et al. 2017). However, we focus on BLERs' influence on the pay ratio between CEOs and average workers.

³ Responding to this intense backlash, the US Securities and Exchange Commission implemented the Dodd–Frank Act in 2015, requiring public firms to disclose the difference in the CEO's pay and average workers' wages (the pay ratio) in their annual reports. Many European countries have adopted similar laws to increase the transparency of executive compensation.

⁴ See https://www.business-standard.com/article/companies/ceos-in-us-india-earn-the-most-compared-with-global-peers-117122900055_1.html.

⁵ Although lower than pay gaps in the United States, those in Europe have increased to a record high in recent years. For example, the United Kingdom reports a pay ratio of 201, the highest among European countries, followed by the Netherlands, Switzerland, and Spain, with 171, 152, and 143, respectively.

⁶ Anecdotal evidence suggests that the high pay gap in firms results from weak corporate governance whereby CEOs can influence their pay structure (Bebchuk and Fried 2003; Bebchuk, Cremers, and Peyer 2011) or as a sign of a firm's ability to attract talented individuals to manage a firm (e.g., Gabaix and Landier 2008; Murphy 2013).

⁷ This finding is consistent with those of Prigge (1998), Fauver and Fuerst (2006), and Ginglinger, Megginson, and Waxin (2011).

⁸ Jensen and Meckling (1979) call the co-determination law inefficient, given the difference in employees and shareholders in the objective function.

⁹ The full document is available at https://travailemploi.gouv.fr/IMG/pdf/CONFERENCE_THEMATIQUE_DU_3_AVRIL_2015__Bilan_de_la_loi_de_securisation_de_l_emploi.pdf.

¹⁰ Ample scholarly evidence shows that paying employees more than average compensation increases firms' productivity (e.g., Propper and Van Reenen 2010; Mueller, Ouimet, and Simintzi 2017; Cappelli and Chauvin 1991).

¹¹ Whereas the sample of compensation data is from 2000 to 2019, the lagged sample, which includes data on the BLERs and other control variables, is from 2000 to 2018.

¹² For more information, refer to [OECD Indicators of Employment Protection - OECD](#).

¹³ The bins are as follows: Bin 1 (0 percentile), Bin 2 (90th percentile), Bin 3 (95th percentile), and Bin 4 (99th percentile). The resulting percentage of BLER representation (#BLERs/Boardsize) for each bin on average is Bin 1 (0%), Bin 2 (12.5%), Bin 3 (27.7%), and Bin 4 (36.8%).

¹⁴ We run the Wald test (also known as an *F*-test) to compare the coefficients of the dummy variables for BIN2, BIN3, and BIN4. The results (not reported) indicate that whereas the coefficients of *Ln(PayRatio)* and *Ln(CEOPay)* are statistically different from one another, those of *Ln(AvgWageEmployee)* are not. Hence, the results in the last column of Table 6 should be interpreted with caution.

¹⁵ French corporate law requires all public firms listed as "Sociétés Anonymes," with at least 1000 employees in France or 5000 worldwide for at least 2 consecutive financial years, to elect at least one BLER (two BLERs) when the firm has fewer (or more) than 12 directors. The list of 33 (65) firms that elect (or do not elect) an employee director upon the regulatory change is available at https://travailemploi.gouv.fr/IMG/pdf/CONFERENCE_THEMATIQUE_DU_3_AVRIL_2015_-_Bilan_de_la_loi_de_securisation_de_l_emploi.pdf.

¹⁶ Except for the United Kingdom, Netherlands, Switzerland, Italy, and Belgium, all other countries in our sample require BLERs by law, and the number and rights of BLERs vary across these countries. For instance, Denmark, Finland, and Sweden have the same laws regarding equal rights and responsibilities, but they do not allow BLERs to participate in decision-making regarding collective disputes and agreement negotiations. French law requires equal rights only for BLERs and other directors in private firms. In French state-run enterprises, BLERs do not receive any salary and have less liability than other members. BLERs in Germany, Norway, and Poland have the same rights and responsibilities as other directors, with no exceptions. In Ireland and Spain, the law mandates the presence of BLERs only in state-owned companies, and they have the same rights and responsibilities as other board members. Although the law in Austria specifies that the rights and responsibilities of BLERs are the same as other board members, it allows different treatment of directors. For example, BLERs do not receive a salary and do not make decisions regarding the appointment or dismissal of management board members. The latter condition also holds for BLERs in Finnish firms.

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Appendix A: Definitions of Variables

Variable name	Definition	Source
<i>BLERs</i>	Dummy variable of 1 if the firm has BLERs and 0 otherwise	BoardEx
<i>BLER Intensity</i>	Natural log of the number of BLERs	BoardEx
<i>Independent Board</i>	Dummy variable of 1 if over 60% of directors are independent	BoardEx
<i>Boardsize</i>	Number of directors on the firm's board	BoardEx
<i>Ln (Boardsize)</i>	Natural log of the number of directors on the firm's board	BoardEx
<i>Female Board Member</i>	Dummy variable equals 1 if the firm has a female director and 0 otherwise	BoardEx
<i>BLERs^{Network}</i>	Natural log of the size of the network for BLERs	BoardEx
<i>BLERs^{Tenure on board}</i>	Average time in the company for BLERs at a selected annual report date	BoardEx
<i>PayRatio</i>	CEO compensation divided by average employee wage	Capital IQ
<i>CEO Pay</i>	Total annual compensation of the top executive, including salary, bonuses, restricted stocks and options, long-term incentive plans, changes in pension plans, and all other compensation	Capital IQ
<i>Ln (CEO Pay)</i>	Natural log of CEO pay	Capital IQ
<i>AvgEmpWage</i>	Average annual compensation for all employees	Capital IQ
<i>Ln (AvgEmpWage)</i>	Natural log of the average annual compensation for all employees	Capital IQ
<i>Employees</i>	Number of firms' employees as reported by Compustat	Capital IQ
<i>Firm Size</i>	Natural log of the number of employees	Compustat
<i>Cash Holding</i>	Cash and marketable securities divided by total assets	Compustat
<i>Leverage</i>	Book debt ratio: total debts divided by total assets	Compustat
<i>Sales Growth</i>	Change in the total amount of sales from the previous year	Compustat
<i>ROA</i>	Earnings before depreciation and taxes (EBIT) scaled by the book value of total assets (AT)	Compustat
<i>Firm Value</i>	Market value of equity/Book value of equity	Compustat
<i>Labor Productivity</i>	Natural log of (SALE/number of employees)	Compustat
<i>CEO Change</i>	Dummy variable equals 1 if a firm changed CEO and 0 otherwise	Compustat
<i>Manufacturing</i>	Dummy variable equals 1 if the firm belongs to the SIC two-digit code between 20 and 30 and 0 otherwise	Compustat
<i>HHI</i>	Herfindahl–Hirschman Index represents the firm's market concentration	Authors' calculations
<i>Common Law</i>	Dummy variable equals 1 if the firm is located in a country with a common legal system and 0 otherwise	WDI
<i>Inflation</i>	A consumer price index that changes with the average consumer cost of acquiring goods and services using 2010 as a base year	WDI
<i>EPL</i>	Measures of additional costs and procedures owing to the dismissal of more than one worker at a time (EPC)	OECD
<i>Say on Pay Law</i>	Dummy variable equals 1 if a firm is located in a country that passed a "say on pay" law and 0 otherwise	WDI
<i>Ln (GDPper)</i>	Log of real gross domestic product per capita in USD in year <i>t</i>	WDI
<i>Rule of Law</i>	Reflects the effectiveness of laws for contract enforcement and public rights: 2.5 (worst) ≤ value ≤ +2.5 (best)	WDI

Variable name	Definition	Source
<i>Accountability</i>	Reflects perceptions of the extent to which a country's citizens can participate in selecting the government, as well as freedom of expression, freedom of association, and free media: $-2.5(\text{worst}) \leq \text{value} \leq +2.5(\text{best})$	WDI
<i>Culture–Power Distance</i>	Extent to which less powerful members of a society or organization accept and expect that power is distributed unequally	Hofstede (2001)
<i>Culture–Individualism</i>	Degree of interdependence a society maintains among its members	Hofstede (2001)
<i>One-tiered Board</i>	Dummy variable equals 1 if the country of the firm mandates a one-tiered board structure	Gelter and Siems (2019)
<i>Two-tiered Board</i>	Dummy variable equals 1 if the country of the firm mandates a two-tiered board structure	Gelter and Siems (2019)

Appendix B: Background of BLERs in Europe

Several European countries, such as Germany, France, and Italy, have a two-tiered corporate board structure comprising management and a supervisory board; other countries, such as the United Kingdom, have single-tiered boards similar to those in the United States. The function of the management board tier differs from that of the supervisory tier. Whereas the former involves corporate decision-making for daily management, the latter often represents the interests of corporate stakeholders, such as employees, and focuses on monitoring the decision-making process and electing and dismissing management directors (Hopt and Wymeersch 1994). In some European countries, employee participation in corporate decision-making is legally guaranteed. The concept of direct participation of employee representatives on boards of directors originates from co-determination legislation passed in the early 1970s, which evolved differently across Europe.¹⁶ In countries with a two-tiered board system, the management board directs the company and is the decision-making body, whereas the supervisory board oversees all other decisions. Board structure notwithstanding, labor co-determination aims to integrate workers' interests into the decision-making process and distribute power. Hence, as providers of human capital, workers have a say in firms' decisions (Hammer, Currall, and Stern 1991).

Appendix C: Distribution of Data by Industry

FF#	Industry	BLERs	PayRatio	CEOPay	AvgEmpWage
1	AGRIC	0.047	55.63	617,933	39,435
2	FOOD	0.134	34.51	1,539,939	59,263
3	SODA	0.035	40.01	1,783,489	54,714
4	BEER	0.040	51.54	2,235,452	66,171
5	SMOKE	0.000	102.80	3,500,711	39,757
6	TOYS	0.042	20.10	816,295	67,754
7	FUN	0.003	25.04	1,145,816	85,356
8	BOOKS	0.000	24.35	1,728,543	76,419
9	HSHLD	0.178	33.78	1,580,634	53,988
10	CLTHS	0.078	46.50	1,969,463	45,660
11	HLTHCA	0.198	25.38	1,170,212	52,437
12	MEDEQ	0.136	21.54	1,003,137	75,726
13	DRUGS	0.124	20.28	1,554,594	99,854
14	CHEM	0.199	26.96	1,631,727	71,501
15	RUBBR	0.066	13.99	741,591	61,958
16	TXTLS	0.000	27.44	918,318	39,833
17	BLDMT	0.117	29.66	1,439,883	53,793
18	CNSTR	0.135	22.18	1,374,392	69,831
19	STEEL	0.329	34.56	1,511,313	59,557
20	FABPR	0.000	9.51	538,883	73,849

FF#	Industry	BLERs	PayRatio	CEOPay	AvgEmpWage
21	MACH	0.299	24.62	1,361,894	65,839
22	ELCEQ	0.264	24.74	1,023,168	56,098
23	AUTOS	0.363	31.82	1,766,251	65,460
24	AERO	0.290	24.32	1,718,226	75,803
25	SHIPS	0.308	33.45	1,047,876	39,113
26	GUNS	0.000	12.14	630,987	49,480
27	GOLD	0.000	26.48	448,411	48,683
28	MINES	0.080	50.89	1,413,486	51,872
29	COAL	0.038	23.48	533,195	70,222
30	OIL	0.065	13.89	1,062,717	134,202
31	UTIL	0.255	20.84	1,463,549	80,342
32	TELCM	0.165	27.97	1,676,091	70,088
33	PERSV	0.078	24.32	1,139,766	52,787
34	BUSSV	0.060	17.72	908,642	80,816
35	COMPS	0.073	12.66	812,751	78,522
36	CHIPS	0.127	15.13	947,562	75,391
37	LABEQ	0.022	12.77	862,230	74,908
38	PAPER	0.189	20.96	1,137,418	61,600
39	BOXES	0.097	53.42	2,723,374	60,770
40	TRANS	0.198	31.40	1,404,814	62,527
41	WHLSL	0.043	19.95	978,821	60,050
42	RTAIL	0.079	42.46	1,308,277	37,516
43	MEALS	0.035	45.60	1,239,740	30,552
44	BANKS	0.071	17.78	1,225,947	80,917
45	INSUR	0.146	31.36	1,908,085	97,227
46	RLEST	0.014	10.35	1,031,220	131,207
47	FIN	0.035	9.88	1,220,892	161,819
48	OTHER	0.109	26.05	1,126,387	55,595

Note: This table presents employee representation on the board of directors (*BLERs*), the pay gap between CEOs and employees (*PayRatio*), average CEO pay (*CEOPay*), and average employee compensation (*AvgEmpWage*) in USD by industry.