When Employees have their Say on Capital Structure: Evidence from a Quasi-natural Experiment

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Abstract

We examine changes in the capital structure of small private firms when employees are granted decision rights through representation on the board of directors. Swedish law grants employees the right to have representatives on the board of directors when the firm has more than 25 employees. We exploit this discontinuity using firm-level data on small Swedish private firms and find evidence that employee representation at the board level results in significant decreases in the debt-to-equity ratio. Nevertheless, employee representatives are a minority of the board and have limited voting power. Therefore, we argue that the increase in bargaining power necessary to alter the capital structure of the firm comes from unions having access to additional information provided by the employee board representatives. The stronger effects for the subset of firms where information asymmetries between the firm and the employees are more severe is consistent with the information channel mechanism.

Keywords: *corporate boards, employee participation, capital structure.*
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1 Introduction

In this paper, we examine changes in the capital structure of small private firms when employees are granted decision rights through their representation on the board of directors. Our findings show a significant decrease in the level of debt for firms legally required to have employee representation on their boards. This paper contributes to the literature that studies the interaction between employees' bargaining power and the use of debt by the firm, which has argued that employee bargaining power coming from either unionization, labor protection regulation or voting rights at the board level has a significant impact on firms' financial choices. We add to this literature by showing that, even when the actual voting power of the employees is very limited, having representatives on the board of directors can be an important source of power for employees through increased access to critical information. Additionally, We also expand the scope of this strand of the literature by examining small private firms, since most existing studies focus on large publicly traded firms.

Employees are the largest stakeholder group in most firms and, despite being an essential element for the functioning of the corporation, are generally excluded from the formal decision-making process within the firm. The main argument for this is that employees' interests are not aligned with those of the shareholders. Thus, providing employees with decision rights can shift firm decisions towards maximizing employees' claims. While shareholders are residual claimants and enjoy the gains without bearing the losses due to limited liability, employees face a different situation. The latter are fixed claimants that, in addition, hold an undiversified portfolio and face unemployment risk, which makes them prone to strive for low-risk strategies.

The existing literature has identified three different channels through which the bargaining power of employees can affect the firm's choices.

First, there is evidence that increases in the bargaining power of employees, channelled through labor unions, create a threat to shareholders' wealth. To attenuate this threat due to the increase in employee bargaining power, firms tend to strategically increase their levels of debt as a protection mechanism from wage-increasing or job-related demands (Bronars and Deere, 1991; Atanassov and Kim, 2009; Matsa, 2010; Chava et al., 2020). This response is suitable to counterbalance the increasing power of the unions

and protect shareholders' wealth because by increasing leverage – and the associated increased probability of distress – they create a credible threat to employment coming from outside the firm.

Second, employees' status can be strengthened by labor legislation. If this is the case, the effects are different because the legislation narrows the firms' decision set and it is more difficult for firms to use leverage as a protection mechanism. In fact, this new employee status – employees with better legal protection – makes employee contracts resemble a debt contract (i.e., higher operating leverage), which reduces the operating flexibility for the firm. In this case, firms react by reducing their financial leverage to be able to meet their increased operating leverage and holding back investments (John et al., 2015; Marciukaityte, 2015; Simintzi et al., 2015; Dessaint et al., 2017; Bai et al., 2020).

Third, in addition to labor unions and labor protection laws, there is another source of bargaining power for employees that comes from within the firm. When employees have a voice in the corporate governance of the firm, either through equity ownership and/or representation on the board, they become part of the decision-making process within the firm. The evidence with respect to firm productivity and efficiency is somewhat mixed. While some studies find that having employee representatives on the board does not lead to changes in firm performance (Berglund and Holmén, 2016), others find an effect. This effect is conditional on certain circumstances, such as having moderate levels of representation or the employee representatives being elected by employee shareholders rather than by employees themselves (Fauver and Fuerst, 2006; Ginglinger et al., 2011). Regarding investment decisions, when employees acquire voting rights, they are prone to maximize the value of their claims rather than to maximize shareholder value. Because of the particular situation employees face – undiversified portfolio and unemployment risk – this translates into firms taking fewer risks, undertaking less risky investments and growing more slowly (Faleye et al., 2006).

Interestingly, when employees can participate in corporate governance, they can become an instrument to reduce agency conflicts between managers and shareholders and between shareholders and debtholders. On the one hand, employees on the board are able to reduce agency conflicts between managers and shareholders because of their undiversified portfolio and unemployment risk. This gives them strong incentives to monitor, and

moreover, they are informed monitors (Fauver and Fuerst, 2006). On the other hand, employees' representatives are able to alleviate agency conflicts between shareholders and debtholders. This is because employees are fixed claimants and hold a payoff function similar to that of debtholders. Due to this similarity in interests, employees help protect the interests of debtholders provided that the company is outside the bankruptcy region. In turn, this leads to improved financing conditions, which makes firms hold larger levels of debt (Lin et al., 2018).

Note, however, that this third channel, namely, active participation in corporate governance, can only impact the firm's decisions if employees are well informed about the situation of the firm. Moreover, conversely, information is power, and employees can substantially enhance their bargaining power by accessing more information, even if their voting power is limited. In this paper, we set out to test this idea using a large sample of small private firms with concentrated ownership, where conflicts of interest between shareholders and employees are expected to be most important.

In the context we explore, employees are part of the corporate governance of the firm and are granted decision rights. We study the setting of Sweden, where firms can be required to have employee representation on the board when they have more than 25 employees, which provides the employees of these firms with greater bargaining power. Interestingly, this regulation does not force firms with more than 25 employees to have employee representation on the board but rather gives employees the right to do so.

Specifically, firms in Sweden have a single-tier board system, and in small private firms, shareholders and directors are generally the same individuals. Hence, when employees are entitled to representation on the board, the elected representatives become board members with full contracting capacities. However, since the ownership structure of these firms is highly concentrated, employee representatives only represent a minority on the board, and their votes are very unlikely to be decisive.

Nevertheless, having a seat on the board provides employees with an additional advantage: access to more information. When employee representative become board members, they are able to gather more material information about the firm, and the board's actions become observable to them. Hence, the employees' information set suddenly expands, and it is through this increase in information that they are able to strengthen their bargain-

ing power (Rubinstein, 1982, 1985; Kumar and Sivaramakrishnan, 2008).

As noted above, depending on the source of bargaining power for managers and employees, the capital structure of the firm will present higher or lower levels of debt. Managers will increase the debt levels of the firm as a protection mechanism from wage demands if employees are not part of the corporate governance of the firm (Matsa, 2010), or as a result of attenuated conflicts of interest between shareholders and debtholders when employees are part of the corporate governance of the firm and have decision rights (Lin et al., 2018). However, when employee legal protection is strengthened, managers react by decreasing the debt levels of the firm to be able to face the increased operating leverage (Simintzi et al., 2015).

Because in our context employees have limited voting power, we hypothesize that when employees have the opportunity to seat a representative on the board of directors, they are able to strengthen their bargaining power through increased levels of information. Moreover, we expect that this increase in employees' bargaining power leads to lower levels of debt, which reduces the risk of the firm.

The Swedish regulation regarding employee representation at the board level creates a cutoff rule at 25 employees that allows us to use a regression discontinuity design (RDD) to estimate the effect of employee representation at the board level on the capital structure of the firm using data on small Swedish private firms[1]. The decision to exercise such right rests on the local trade unions. This implies that the probability of having employee representation at the board level should increase discontinuously at the cutoff.

Our results show that relative to the firms just below the cutoff, there is a discontinuous decrease in the debt-to-equity ratio for firms just above the cutoff. The reduced-form estimation confirms a large and significant decrease in the debt-to-equity ratio. This decrease represents 21.13% of the mean value of the debt-to-equity ratio for firms having between 16 and 36 employees, 16.47% for firms having between 21 and 31 employees and 6.89% for firms having between 25 and 27 employees.

To develop a better sense of the economic significance of this effect, Table 1 presents aggregate figures for the different firm class sizes in Sweden and Europe. Small firms – those employing between 10 and 49 individuals – represent 4.5% of all firms in Swe-

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[1]In our sample, the average firm has total assets of approximately SEK 24.2 million (USD 2.8 million).

den. This is a much larger share than, for instance, large firms – employing 250 or more individuals – that account for 0.1% of all firms in Sweden. Small firms employ 22.3% of the individuals employed in Sweden, which is relatively close to the 34.8% individuals employed by large firms. Finally, small firms generate a value added of EUR 44.3 billion (USD 54.17 billion) in Sweden, which represents 19.1% of the total value added and accounts for approximately half of the value added generated by large firms (38.8%). As one might expect, these figures show that small firms represent a very considerable fraction of the economy in Sweden and that the estimated decrease in the debt-to-equity ratio is economically significant even at the macroeconomic level.

The decrease in firm leverage reduces the potential risk of bankruptcy, which overall reduces the unemployment risk for these employees. Additionally, firms subjected to employee representation on the board also increase their personnel expenses. Concretely, they increase the yearly salary per employee by approximately SEK 5,550-6,806 (USD 669-821) and the yearly social security expense per employee by approximately SEK 3,680-4,965 (USD 443-598). These results suggest that an increase in the bargaining power of employees through direct representation in the firm (i.e., board representation instead of union representation) allows them to shift the firm's corporate decisions towards their own interests by (1) minimizing the risk of their undiversified portfolio and (2) maximizing the value of their claims.

To test the information channel mechanism through which the bargaining power of employees increases, we perform several cross-sectional tests. We compare firms in which information is more easily available with firms in which gathering information is more complex. Hence, the information gathered through the employee representatives on the board should be more valuable for firms in which accessing information from the outside is more difficult. Our results are consistent with this hypothesis: We find that the effect of having employee representation at the board level on the debt-to-equity ratio of the firm is stronger for firms in which acquiring information is ex ante more difficult and that this effect is not present for firms where the access to information is relatively easier. Specifically, we find the effect to be strong for growth firms and firms with a more complex accounting environment.

The remainder of the paper proceeds as follows, Section 2 explains the institutional

setting. Section 3 presents the empirical methodology. Section 4 describes the data and statistics. Section 5 provides the results on the effect of having employee representation on the board and on the information channel. Section 6 presents robustness tests. Finally, Section 7 concludes.

2   Institutional setting

In this section, we describe the institutional setting in three layers. First, we offer insights on the degree of unionization at the country level and its organizational structure. Second, we explain the governance structure, focusing the board's structure and features. Third, we specifically describe the regulation regarding employee representation at the board level and its implementation in the firm.

2.1   Labor unions in Sweden

Sweden's legal framework regarding workers' rights and conditions, grants trade unions an important active role in mediating the relationship between employers and employees. As a result, Sweden presents a high rate of unionization and maintains an active role concerning collective agreements.

Sweden's unionization rate has decreased over the years, but it remains among the highest in developed countries. In the early 2000s, Sweden's unionization's rate was approximately 90% whereas in 2017, it dropped to 66%. Figure 1.A shows the *trade union density*[2] for Sweden, Germany, the United Kingdom and the United States. Sweden's unionization rate is the highest among the other countries despite its decline over time, and the difference with the rest of countries remains large. One of the reasons for the high level of unionization is Sweden's legislation regarding cooperation among labor market parties. The 1976 Co-Determination Act (MBL) mainly serves as a framework for the relationship between employer and employee. This is because it covers the minimum conditions and grants trade unions the power to complete and enhance such conditions through collective agreements.

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[2]Defined as the percentage of employees who are members of affiliated and independent unions. For a more detailed definition, see `https://www.oecd.org/els/emp/uniondensity_sourcesandmethods.pdf`.

Sweden has approximately 115 firm and employee representative organizations, 55 of which are employer organizations and 60 are trade unions. The main employer organization of private entities is the Confederation of Swedish Enterprise. The corresponding entities in the public sector are the Swedish Agency for Government Employers and Swedish Association of Local Authorities and Regions (SALAR). There are three main employee organizations or central organizations: The Swedish Trade Union Confederation (LO) with 1.3 million members and 14 trade unions, The Swedish Confederation of Professional Employees (TCO) with 1.1 million members and 14 trade unions, and The Swedish Confederation of Professional Associations (Saco) with approximately 500 thousand members and 23 trade unions. LO coordinates blue-collar workers, and TCO and Saco coordinate white-collar workers, although the latter focuses on graduate employees.

Along with its high rate of unionization, Sweden presents a high collective agreement coverage. Figure 1.B shows the percentage of employees with the right to bargain[3] for Sweden, Germany, the United Kingdom and the United States. Unlike the rate of unionization, the rate of coverage by collective agreements in Sweden has been fairly steady over time.

The main reason for this is that employers have the obligation to apply the collective agreement to every worker regardless of their union status. The difference in the collective agreement coverage rate with the other countries is large. However, the gap with Germany is smaller than the gap with other countries. This seems reasonable given the stakeholder-focused approach characteristic of the German economy.

As of 2020, there were nearly 670 collective agreements in Sweden concerning working conditions and wages. Of these collective agreements, 485 were to be renegotiated in the fall of 2020; however, they were extended due to the COVID-19 pandemic. These 485 collective agreements cover approximately 3 million workers[4].

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[3]Defined as the number of employees covered by the collective agreement divided by the total number of wage and salary earners.

[4]We retrieved this information from the Swedish National Mediation Office (`https://www.mi.se`).

2.2 Corporate governance in Sweden

Corporate governance in Sweden follows a similar structure as in most developed countries.

The main governing bodies of a corporation are the shareholders' general meeting, the board of directors and the managing (executive) director.

The ultimate decision-making authority rests with the shareholders' general meeting. This body oversees the control of the company. Some of the decisions made by the shareholders' general meeting are the election/dismissal of directors and the chairman, the approval of financial statements, the distribution of profits, the decision to have (and the election of) an auditor, and the remuneration scheme for the directors.

The board of directors is the second-order authority for decision-making. Directors hold fiduciary duties to shareholders and are responsible for the management of the firm. The Swedish Companies Registration Office (SCRO) makes mandatory the establishment of a board of directors for limited companies, following a single-tier board system. The number of directors on the board is not fixed. It can consist of only one director or more, without any specificity on a maximum[5]. However, when there are two or more directors, at least one of the directors must be appointed chairman of the board by the shareholders. For small private firms, shareholders and directors are generally the same individuals. For such firms, appointing a managing director is optional, unlike for public companies. Additionally, the managing director can simultaneously be the chairman of the board in the case of private firms. When appointing a managing director, the board transfers the day-to-day management decisions and representation (i.e., executive power) to this director[6][7].

As stated above, the board of directors is responsible for the management of the firm. This includes the management of the firm's activities and corporate policies, the arrangement of general meetings, the completion of tax payments, the filing of the annual report with the SCRO, etc. The chairman is responsible for ownership matters regarding the shareholders and for expressing shareholder concerns and visions to the board.

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[5]In our sample, the number of board members ranges between one and four.

[6]We retrieved this information from the Swedish National Mediation Office (`https://www.mi.se`).

[7]Swedish Corporate Governance Board. (2020). *Swedish Corporate Governance Code*. `https://www.corporategovernanceboard.se`

2.3 Employee board-level representation

Sweden provides specific regulation concerning employee representation at the board level. This regulation entitles employees to have representation at the board level under certain circumstances.

The 1987 Board Representation for Employees in Private Employment Act grants employees the right to two representatives on the board of directors when in the most recent financial year, the firm employed more than 25 employees. However, employee representation is constrained so as to not have a majority on the board. Often, small private firms will add a new member to the board to ensure their majority (Thomsen et al., 2016), and there will be only one employee representative [8].

The decision to exercise the right to have board representation rests with the local trade unions, which must have an active collective agreement with the firm. The process for appointing the representatives can be addressed in various ways. The different trade unions of the firm can reach an agreement on the appointment of the representatives.

In the event that no agreement can be reached, the regulation provides some guidance. First, if one of the trade unions covers more than 80% of the employees in the collective agreement, this union appoints all the representatives. Second, if no union represents such a fraction of employees, the two largest trade unions appoint one representative each.

In any case, the chosen representatives must be employees of the corresponding firm.

The appointed representatives become board members with full capacities. That is, employee representatives have the same rights and bear the same responsibilities as regular directors, and their vote has the same weight as the rest of the directors. The only exception arises during collective bargaining discussions, where representatives cannot take part due to conflicts of interest.

However, employee representatives do not have a very active role on the board. Levinson (2001) conducts surveys on the experience of having employee representation on the board and the integration of such members in Swedish firms. The study surveys approximately 400 managing directors, 300 chairpersons, 400 blue-collar representatives and

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[8]PTK (The Council for Negotiation and Cooperation). (2019). *Company board member: A handbook for employee representatives on Swedish company boards.* https://www.ptk.se

400 white-collar representatives. The majority of managing directors and chairpersons report employee representation to be a positive and enriching experience for the firm. Additionally, most companies report good cooperation among the board members and the representatives, especially in small firms with fewer than 100 employees.

With respect to the representative role on the board, Levinson (2001) reports low participation on the board by representatives. In particular, representatives do not take part in the planning process of the board's agenda. Moreover, more than one-fourth of the representatives believe that decisions are made elsewhere than the board and that, generally, representatives support the board decisions unreservedly.

Nonetheless, the passive participation diminishes when the board discusses personnel issues regarding production processes, environmental conditions and reorganization decisions (Levinson, 2001).

On the other hand, employee representatives are actively engaged with the trade union. First, employee representatives have the right to receive training for this position. Second, most representatives have contact with their trade union reference groups before a board meeting takes place to discuss the board's agenda. Third, after the board meeting, employee representatives report back to their union reference groups regarding the matters discussed in the board meeting. Overall, board representation helps unions anticipate the firm's reactions to their proposals and have a deeper understanding of the firm's conditions.

3 Empirical methodology

In this section, we discuss how we use RDD to examine the effect of employee representation at the board level on the capital structure of the firm.

According to the 1987 act, employees have the right to be represented on the board when the firm has more than 25 employees. This regulation suggests that firms are likely to have employee representation on the board when they have more than 25 employees and generates as-if-random variation in employee representation. We therefore implement an RDD, applying the following decision rule:

$$Represented_{it} = \begin{cases} 1 & if \ EMP_{it} > 25, \\ \\ 0 & otherwise \end{cases} \quad (1)$$

where EMP_{it} is the forcing variable, measured as the number of employees of firm i in year t. Equation (1) classifies firms with more than 25 employees as subject to the treatment.

The identification assumption in this empirical design is local continuity, which implies that firms around the cutoff are similar and comparable, meaning that in the absence of treatment, there would be no jump in the outcomes. This assumption is plausible since the cutoff is rather arbitrary and the decision to have employee representation on the board is up to the trade unions. We further discuss and examine this assumption in Section 6.

We estimate the following specification:

$$D/E_{it} = \alpha + \beta Represented_{it} + f(EMP_{it} - EMP')$$
$$+ Represented_{it} \cdot g(EMP_{it} - EMP') + \lambda X + \omega_{jt} + \varepsilon_{it} \quad (2)$$

where D/E_{it} is the debt-to-equity ratio, $f(\cdot)$ and $g(\cdot)$ are continuous functions of EMP, X is a vector of control variables and ω_{jt} are industry-times-year fixed effects. The coefficient of interest, β, captures the reduced-form effect of having employee representation at the board level on the debt-to-equity ratio. Standards errors are robust and clustered at the firm level[9].

Following Imbens and Lemieux (2008), we estimate the regression with a rectangular kernel and on a small bandwidth around the cutoff, $-h < EMP < h$. we estimate the regression on three different bandwidths to ensure that the results are not sensitive to the choice of bandwidth. Since a larger bandwidth allows for more precision but at the cost of additional bias, the bandwidths we select are of 1, 5 and 10 employees around the cutoff. A bandwidth of 1 will have the most comparable firms around the cutoff, while a bandwidth of 10 will have less comparable firms but greater precision due to the increase in the number of observations. In Equation (2), we combine both polynomial

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[9]In untabulated tests, we cluster standard errors at the industry level and confirm that our results are robust.

and local regression procedures by selecting a specific polynomial order for each choice of bandwidth. For a bandwidth of 1, we do not introduce linear specifications on either sides of the cutoff (Atanasov and Black, 2016, p.287). For a bandwidth of 5, $f(\cdot)$ and $g(\cdot)$ are quadratic polynomials. For a bandwidth of 10, $f(\cdot)$ and $g(\cdot)$ are cubic polynomials.

In this setup, falling above the cutoff is not a sufficient condition to receive the treatment; rather, falling above the cutoff makes a firm eligible to receive the treatment. This is because employees of firms with more than 25 employees have the right to be represented on the board, but the decision to introduce such representation is up to the trade unions, which might not always do so. This means that the treatment probability as a function of *EMP* will contain a discrete jump at the cutoff that will be less than one.

When this occurs, the RDD becomes fuzzy, and the discontinuity is used as an instrument[10].

4   Data

In this section, we describe the data used throughout the analysis. First, we explain the data sources and the main characteristics of the sample. Next, we define the variables included in the analyses. Finally, we present the summary statistics for our sample.

4.1   Data sources and variable construction

The source of the data is the Serrano database. Serrano collects information at the firm level from three additional sources. The SCRO (Bolagsverket) provides the financial statements and bankruptcy data. Firms' identifying information comes from Statistics Sweden (SCB). Bisnode Group Register collects information at the group level. Serrano aggregates the data from these three sources and generates one comparable entry as of December 31 for each firm-year combination, which is updated twice per year (May and December).

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[10]Fuzzy RDD is estimated following a two-equation system that can be done through 2SLS, where the first equation (first stage) estimates the treatment probability as a function of the assignment indicator (decision rule), and the second equation (second stage) estimates the outcome variable as a function of the fitted values of the treatment probability from the first stage. However, we do not have the necessary data to implement a fuzzy RDD at the moment. Hence, in Equation (2) we estimate the reduced-form, which only allows us to estimate the lower bound of the true effect.

The original sample contains 3,405,264 firm-year observations over the period from 2000 to 2018, but we restrict the sample to those observations that fall around the cutoff. The main analysis uses a sample of 14,415 firm-year observations for a bandwidth equal to 1, a sample of 74,073 firm-year observations for a bandwidth equal to 5 and a sample of 170,188 firm-year observations for a bandwidth equal to 10. We also exclude firms belonging to the financial industry[11].

To capture the capital structure of the firms, we use the debt-to-equity ratio. D/E_{it} is defined as the sum of short- and long-term liabilities to credit institutions divided by total equity. To ensure that the change in capital structure is derived from variation in the level of debt, we examine the interest expense and pledged assets. *Interest Exp$_{it}$* is defined as the natural logarithm of one plus the interest paid to credit institutions, and *Pledged Assets$_{it}$* is defined as the sum of pledged assets, including floating charges, real state mortgages and other pledged assets, divided by total assets. To capture the cost of labor, we use employee salaries and social security expenses. *Employee Salary$_{it}$* is defined as the salaries and compensation for employees divided by the number of employees, and *Social Security Exp$_{it}$* is defined as the social security expense divided by the number of employees. We include several control variables. To control for size, we include *Firm Size$_{it}$*, defined as the natural logarithm of total assets, and *Sales$_{it}$*, defined as the natural logarithm of net sales. To control for profitability, we include *ROA$_{it}$*, defined as the net profit divided by total assets at the beginning of the year. To control for growth opportunities, we include *Sales Growth$_{it}$*, defined as the change in net sales divided by net sales at the beginning of the year. To control for tangibility, we include *Tangibility$_{it}$*, defined as the tangible fixed assets divided by total fixed assets.

4.2 Summary statistics

Table 2 presents summary statistics on the variables described in the Section above. Summary statistics are presented for the three different bandwidths (1, 5 and 10).

The average D/E is approximately 1.38 points, which implies that, on average, debtholders finance a greater part of the assets than shareholders. The average interest expense is

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[11]We use the SNI (Swedish Standard Industrial) classification for the industry classification. The SNI is based on the EU standard industry classification, NACE.

approximately 10.4 on a logarithm scale; in terms of net sales, the interest expense accounts for approximately 3% of net sales on average. On average, pledged assets comprise 3.1% of total assets. With respect to labor costs, firms incur, annually on average and per employee, a salary expense of approximately SEK 308 thousand (USD 36,405) and a social security expense of SEK 136 thousand (USD 16,075). In terms of size, the average firm in the sample with the lowest bandwidth has total assets of approximately SEK 26.8 million (USD 3.2 million) and net sales of approximately SEK 45.8 million (USD 5.4 million), which translates to 16.7 and 17.4 on a logarithmic scale, respectively. The average firm in the sample with the largest bandwidth has total assets of approximately SEK 24.2 million (USD 2.8 million) and net sales of approximately SEK 40.7 million (USD 4.8 million), which translates to 16.5 and 17.2 on a logarithmic scale, respectively. With respect to profitability, the average firm presents a fair operating performance with an ROA of approximately 6%. For a bandwidth of 1 and 5, the average firm has a sales growth rate of 6.4% and for a bandwidth of 10 a sales growth rate of 6.3%. The average firm has a high degree of tangibility with tangible fixed assets representing approximately 75% of total fixed assets.

5 Results

In this section, we present the results of the analysis. First, we examine the effect of being subjected to employee board representation on the debt-to-equity ratio of the firm. Next, we analyze whether the increase in the bargaining power of employees leads to an increase in the value of their claims. Last, we test the information channel through a set of cross-sectional tests.

5.1 Capital structure

We start by presenting the graphical analysis and the results of the reduced-form estimation.

Figure 2 plots the mean debt-to-equity ratio on a bandwidth of 5 (Panel A) and a bandwidth of 10 (Panel B) around the cutoff, using the optimal number of bins. The polynomial orders are 2 and 3, respectively. This graphical analysis reveals a discontinuity

around the cutoff: there is a decrease of approximately 0.15 points in the debt-to-equity ratio for firms above the cutoff relative to firms just below the cutoff, which represents roughly 11% of the mean value of the debt-to-equity ratio.

Table 3 reports the results of the reduced-form estimation. Columns 1 and 4 estimate the regression on a bandwidth of 1 with no linear specification on either side of the cutoff. Columns 2 and 5 estimate the regression on a bandwidth of 5 and include quadratic polynomials on both sides of the cutoff. Columns 3 and 6 estimate the regression on a bandwidth of 10 and include cubic polynomials on both sides of the cutoff. Columns 4 to 6 include *ROA*, *Sales Growth* and *Tangibility* as additional controls. All specifications include industry-times-year fixed effects.

The overall result shows a significant decrease in the debt-to-equity ratio for firms subjected to employee representation on the board. For the less saturated specifications (Columns 1-3), the coefficients are statistically significant. The decrease in the debt-to-equity ratio represents 7.97% of the mean value of the debt-to-equity ratio for firms in a bandwidth of 1 around the cutoff, 19.71% of the mean value of the debt-to-equity ratio for firms in a bandwidth of 5 around the cutoff, and 24.04% of the mean value of the debt-to-equity ratio for those firms in a bandwidth of 10 around the cutoff. For the most saturated specifications (Columns 7-8), the coefficients from the specifications on a bandwidth of 5 and 10 are statistically significant. The decrease in the debt-to-equity ratio for these two specifications represents 16.47% of the mean value of the debt-to-equity ratio for firms in a bandwidth of 5 around the cutoff and 21.13% of the mean value of the debt-to-equity ratio for firms in a bandwidth of 10 around the cutoff.

The decrease in the debt-to-equity ratio for firms subjected to employee representation at the board level is consistent with the hypothesis that employees are risk averse and that, when they have sufficient bargaining power, they will strive for strategies that reduce the overall risk of their firm to minimize the unemployment risk they face.

Nonetheless, the observed decrease in the debt-to-equity ratio could be due to a decrease in the debt levels of the firm or to an increase in equity. To further strengthen the result that this change comes indeed from a decrease in the debt levels of the firm, we examine whether the interest expense and the pledged assets of the firms change when they are subjected to employee board representation. Figure 3 plots the mean interest

expense (Panels A and B) and the mean pledged assets (Panels C and D) on a bandwidth of 5 (Panels A and C) and a bandwidth of 10 (Panels B and D) around the cutoff, using the optimal number of bins. The polynomial orders are 2 for bandwidth of 5 and 3 for a bandwidth of 10. Graphically, there is a discontinuous decrease in the level of interest expense and pledged assets for those firms above the cutoff relative to the firms just below the cutoff.

Table 4 shows the results for the reduced-form estimation on the interest expense. For the specifications including firm-level controls (Columns 4 and 5), the results show a decrease in the interest expense for firms subjected to employee representation on the board. The coefficients are statistically significant. For a bandwidth of 1, firms above the cutoff report a decrease of their interest expense of 13.13% relative to firms below the cutoff, for a bandwidth of 5 the decrease in the interest expense is 27.5% and, for a bandwidth of 10, the decrease reaches 32.69%.

Table 5 presents the results from the reduced-form estimation on pledged assets. The results from the specifications including firm-level controls (Columns 4 and 5) report a decrease in the percentage of pledged assets to total assets for firms required to have employee board representation. All coefficients are statistically significant. Relative to firms below the cutoff, firms just above the cutoff report a decrease in their fraction of pledged assets to total assets of 0.0115 points for a bandwidth of 1, 0.0305 points for a bandwidth of 5 and 0.0321 points for a bandwidth of 10. These decreases represent 3.65%, 9.62% and 10.06% of the mean value of pledged assets to total assets, respectively. These two findings on interest expenses and pledged assets confirm that the decrease in the debt-to-equity ratio comes from a change in the debt levels of the firm rather than a change in equity.

5.2   Labor costs

Thus far, we have seen that when employees' bargaining power increases, they use their influence to reduce leverage and the associated risk of financial distress. In this section, we examine whether employees also use their higher bargaining power to increase their claims on the company. Specifically, we analyze if firms subjected to employee representation at the board level suffer any changes in their labor costs – namely, employee

salaries and social security expenses.

Figure 4 plots the mean salary per employee (Panels A and B) and the mean social security expense per employee (Panels C and D) on a bandwidth of 5 (Panels A and C) and a bandwidth of 10 (Panels B and D) around the cutoff, using the optimal number of bins. The polynomial orders are 2 for a bandwidth of 5 and 3 for a bandwidth of 10.

The graphical analysis shows a discontinuous increase in the salary and social security expense per employee for firms falling just above the cutoff relative to firms just below the cutoff.

Table 6 presents the results for the reduced-form estimation on salary per employee. Specifications including firm-level controls (Columns 4-6) report statistically significant coefficients for a bandwidth of 5 and 10. Using a bandwidth of 5, the results show an increase in the yearly salary per employee of SEK 5,550 (USD 669) for firms above the cutoff relative to firms falling just below the cutoff. For a bandwidth of 10, there is an increase of SEK 6,806 (USD 821) for firms required to have representation on the board relative to firms that are not.

Table 7 shows the results of the reduced-form estimation on social security expense per employee. Columns 4-6 – using firm-level controls – present statistically significant coefficients for specifications using a bandwidth of 5 and 10. The results report an increase in the yearly social security expense per employee of SEK 3,680 (USD 443) and of SEK 4,965 (USD 598) for firms above the cutoff compared to firms below the cutoff for bandwidths of 5 and 10, respectively.

The results in this section are consistent with previous work (Faleye et al., 2006) and with the hypothesis that employees with greater bargaining power will use it to favor their own claims at the expense of those of the shareholders.

5.3   Information channel

The previous results are consistent with the hypothesis that an increase in the bargaining power of employees allows them to shift the firm's decisions towards their interests by reducing the risk of the firm and increasing the value of their claims. However, in this setting, the source of this increase in their bargaining power does not seem to come from

the mere fact of being entitled to exercise decision rights but rather from an increase in their information set. Having a seat on the board allows employees to observe the board's actions and to acquire further material information about the firm's financial position.

To examine whether the access to this new information is the mechanism through which employees are able to increase their bargaining power and shift the firm's decisions to their advantage, we perform several cross-sectional tests. we compare firms for which information is easily accessible to outsiders to firms for which gathering information from outside the firm is a more complex process. The rationale for this is that the information accessed through the employee representatives will be more valuable in firms with complex information environments, where acquiring information as an outsider is difficult. By contrast, in firms with a widely accessible information environment, employees will not substantially expand their information set by having an employee representative on the board and, thus, will also not change their level of bargaining power.

Table 8 presents the cross-sectional results on the information channel for the reduced-form estimation on the debt-to-equity ratio using a bandwidth of 10 and a polynomial of order 3 on both sides of the specification.

Columns 1 and 2 report the results for growth and mature firms, respectively. Growth firms are defined as those with sales growth above the industry median sales growth computed yearly, and mature firms are defined as those below the median. Employees working in mature firms can access richer information sets about the firm with less effort because the key information about these firms are their assets in place, which can be easily verified. However, the key information for growth firms refers to their growth opportunities. Accessing the information on growth opportunities for a firm will be complex for an outsider (Metrick and Yasuda, 2010). Thus, having a seat on the board will facilitate access to information about these growth opportunities.

Therefore, we expect that employee representatives should be more useful for growth firms, in which accessing additional information by virtue of the board positions will help employees substantially increase their bargaining power.

Consistent with this hypothesis, the results show that the impact on the debt-to-equity ratio of the legal requirement to have employee board representation is only statistically significant for growth firms, whereas the effect for mature firms shows no statistical sig-

nificance.

Columns 3 and 4 report the results for high and low information complexity firms, respectively. High information complexity firms are defined as those with a level of accruals[12] above the industry median level of accruals computed yearly, and low information complexity firms are those below the industry median. The motivation for this test is that the accounting information of firms with a more cash based accounting is easily understandable, whereas processing and understanding the accounting information of firms subject to large levels of accruals becomes a more complex process, especially for individuals without an accounting background (Hodder et al., 2008).

Hence, we expect that having a seat on the board of directors will be more important in high information complexity firms as a tool to increase the employees' bargaining power.

The results are consistent with this hypothesis and show that the effect of required employee board representation is statistically significant and larger than the average for high information complexity firms, while the effect for firms with low information complexity is not statistically significant and close to zero.

Overall the results from the cross-sectional tests are consistent with the information channel: the effect of the legal requirement to have employee representation at the board level is only observed for the subset of firms for which there are larger information asymmetries between the firm and the employees. This suggests that employees are able to influence the firm's corporate decisions through an increase in their bargaining power because employee board representation enriches their information sets.

6 Robustness

In this section, we present several robustness tests to assess the internal validity of our RD setting. First, we check the distribution of the forcing variable to check for the possibility of manipulation. Second, we examine whether there is continuity in different firm characteristics. Third, we repeat the main analysis using several placebo cutoffs. Fourth, we perform an array of cross-sectional tests.

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[12]Total accruals are defined as [((ΔTotal current assets - ΔLiquid assets) - ΔTotal current liabilities - Δ Current liabilities to credit institutions) - Depreciation and Amortization)] divided by total assets at the beginning of the year following Ball and Shivakumar (2005).

6.1 Manipulation of the forcing variable

An RDD relies on the assumption that the probability of falling on one side of the cutoff or the other is random. For this assumption to hold, firms cannot manipulate their number of employees to endogenously choose being on one specific side of the cutoff. This is a plausible assumption since firms aim to maximize shareholder value, which involves a certain level of growth, and manipulating the number of employees would interfere with profitability and growth objectives. Moreover, ultimately, the decision to introduce employee representation on the board is up to the trade unions.

To investigate whether there is manipulation, we first plot the distribution of the forcing variable and then conduct McCrary's (2008) procedure. Figure 5.A plots the distribution of the number of employees and shows that this distribution is smooth around the cutoff. Figure 5.B plots the estimated density of the forcing variable and shows that the distribution is smooth around the cutoff. Since our forcing variable is discrete, we follow Frandsen's (2017) discrete test for running variable manipulation to statistically test the assumption. We obtain p-values of 0.191 with $k = 0$; 0.298 with $k = 0.01$; and 0.548 with $k = 0.02$[13]. For these p-values, we cannot reject the null hypothesis that the density of the forcing variable is smooth around the cutoff.

6.2 Covariate balance

The local continuity assumption also implies that firms situated around the cutoff are similar such that in the absence of treatment, there would be no jump in the outcomes. To assess firms' similarity, we take general firm characteristics, namely *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility*, and perform a covariate balance test to check that the distribution of the characteristics is continuous and smooth around the threshold.

Table 9 presents the covariate balance under the three different bandwidths. Panel A presents the results for a bandwidth of 1. In Panel A, *Firm Size* and *Sales* are statistically significant, which indicates these characteristics are not smooth around the cutoff. However, it is reasonable for these two characteristics not to be smooth around the cutoff since the cutoff is based on size, and size is proxied by the number of employees. Given

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[13]k determines the degree of nonlinearity around the threshold that is considered compatible with no manipulation (Frandsen, 2017).

that *Firm Size* (i.e., total assets) and *Sales* are also proxies for size, we are ultimately looking at the same forcing variable under different measures. The rest of characteristics in all three panels are not statistically significant, which supports the local continuity assumption, implying that these characteristics are smooth around the cutoff.

6.3 Placebo tests

To examine the internal validity of the design, we repeat the main analysis under different placebo cutoffs. Table 10 presents the results of the placebo tests under the three different bandwidths. The placebo cutoffs are set at 22, 23, 29 and 30 employees. None of the coefficients are statistically significant for either bandwidth, which shows continuity in the debt-to-equity ratio around the placebo cutoffs.

6.4 Cross-sectional tests

In this section, we perform several cross-sectional tests to strengthen the robustness of our results. We examine whether the effect of having employee representatives at the board level on the debt-to-equity ratio differs along the level of unionization of the firm's industry and the firm's level of liquidity.

Table 11 presents the reduced-form estimation on the debt-to-equity ratio for different levels of unionization and cash constraints, using a bandwidth of 10 and a polynomial of order 3 on both sides of the specification.

Columns 1 and 2 report the results for firms operating in low-unionization industries and high-unionization industries, respectively. Low-unionization firms are defined as those operating in industries with a low level of unionization (white collar) and high-unionization firms as those operating in industries with a high level of unionization (blue collar). Employees in firms with a high level of unionization already have a high level of bargaining power, which allows them to more easily satisfy their demands. However, employees in low-unionization industries lack bargaining power, and thus having a board representative allows them to increase their bargaining power with the firm. Hence, the effect of having an employee representative sitting on the board of directors on the debt-to-equity ratio is expected to be stronger in low-unionization industries. The results are

consistent with this hypothesis: the effect for firms operating in low-unionization industries is statistically significant and larger than the average effect (see Table 3), and the effect for firms in high-unionization industries is not statistically significant.

Columns 3 and 4 report the results for cash-constrained and non-cash-constrained firms, respectively. Cash-constrained firms are defined as those with a cash-to-assets ratio below the median of their industry cash-to-assets ratio computed yearly, and non-cash-constrained firms are defined as those above the median. A given debt-to-equity ratio implies a higher probability of financial distress for cash-constrained firms (Opler and Titman, 1994). Thus, employees in firms that are not cash constrained will not have incentives to decrease the leverage of their firm. Consequently, we expect that the effect of having employee board representation on the debt-to-equity ratio is stronger for cash-constrained firms than for firms without cash constraints. In line with this hypothesis, the results indicate that the effect of being subjected to employee representation at the board level on the debt-to-equity ratio is only statistically significant for cash-constrained firms, whereas for firms that are not cash constrained, the effect is not statistically significant and is close to zero.

7   Conclusion

In this paper, we examine changes in the capital structure of small private firms when employees are granted decision rights through their representation on the board of directors.

We focus on a context in which employee representatives on the board become board members with full contracting capacities like the rest of directors. Swedish law grants employees the right to appoint representatives on the board of directors when the firm has more than 25 employees. This law provides us with as-if-random variation in employee representation and allows us to implement an RDD to study the effect of employee board representation on the capital structure of the firm. We find evidence that employee representation at the board level significantly decreases the debt-to-equity ratio.

The setting we study differs from those considered in previous literature in that employees' bargaining power comes from direct representation on the board rather than through labor unions or labor protection legislation. In this context, the source of the

increase in the employee bargaining power does not derive from the decision rights associated with board positions. Employees' representatives are a minority of the board, which is otherwise dominated by large shareholders. Therefore, we argue that the increase in bargaining power associated with the board positions comes from increased information. This increased information is the mechanism through which employee board representation enhances employee bargaining power and affects the capital structure of these firms.

Having a seat on the board allows employees to observe the board's actions and to acquire further material information about the firm's financial position. We find support for the information channel mechanism: the effect of having employee board representation on the debt-to-equity ratio is only observed for the subset of firms with larger information asymmetries between the firm and the employees.

Our findings contribute to the ongoing literature on the interaction between changes in employees' bargaining power and the use of debt by the firm and show that access to key information is a critical asset that enhances employees' bargaining power when they are represented on the board of directors, even when they have limited voting power.

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Appendix

A.1 Figures

Figure 1. Comparison of unionization rates and bargaining rights across countries.
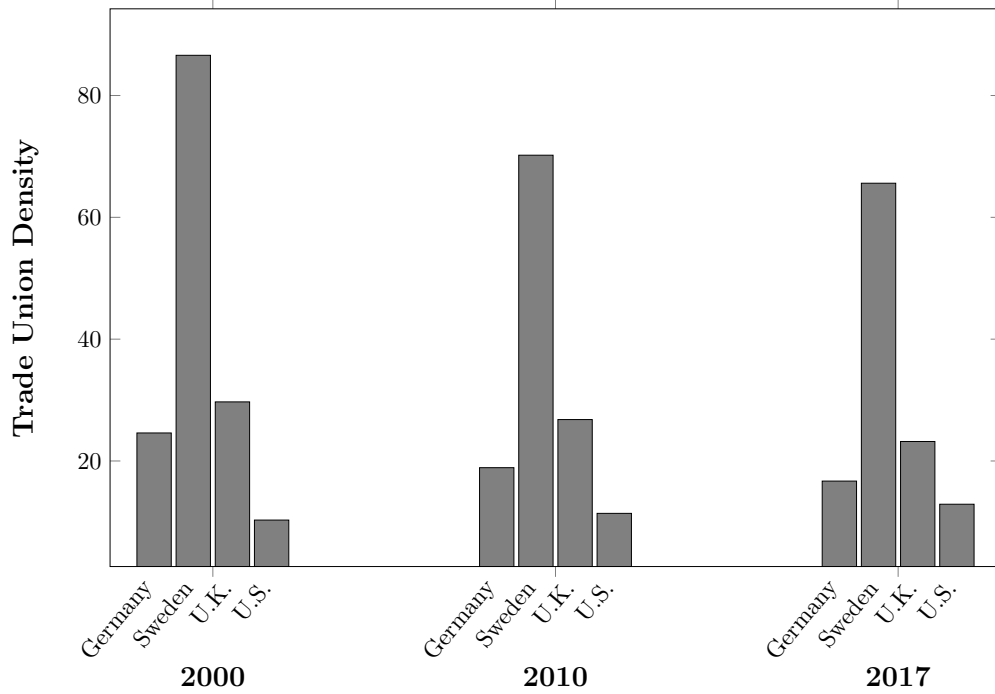
A. Unionization rate.
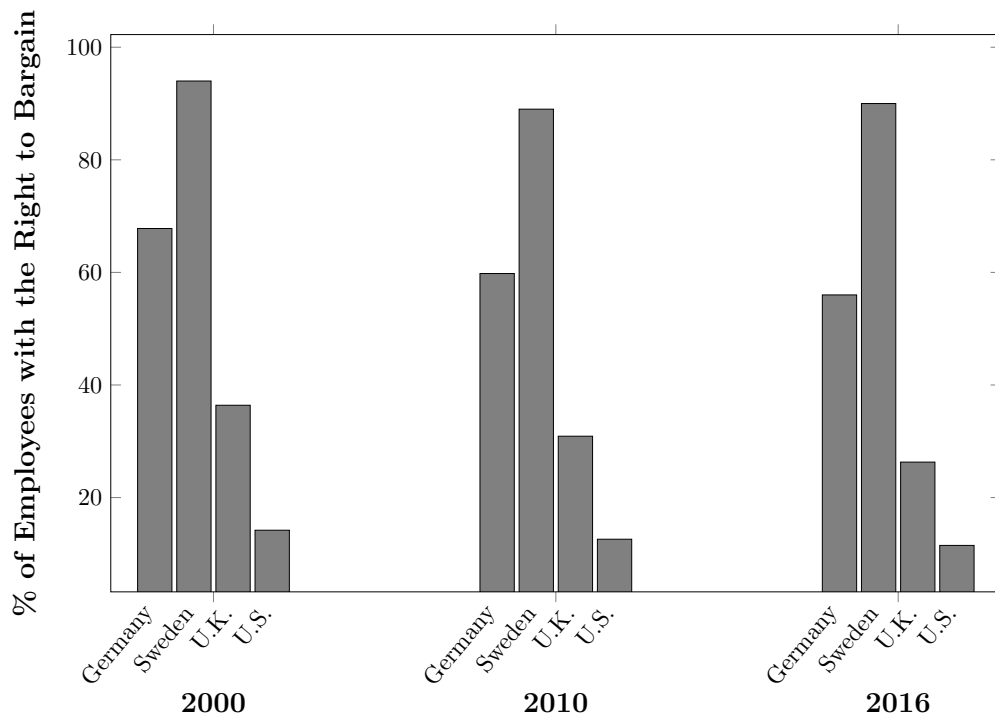
B. Bargaining rights.

Figure 1 Panel A shows the trade union density for Sweden, Germany, the United Kingdom and the United States in the years 2000, 2010 and 2017. Figure 1 Panel B shows the percentage of employees with the right to bargain (i.e., those covered by a collective agreement) for Sweden, Germany, the United Kingdom and the United States in the years 2000, 2010 and 2016. Data source: OECD `https://stats.oecd.org/Index.aspx?DataSetCode=TUD#`

Figure 2. Graphical analysis: Capital structure.

A. With bandwidth 5 and polynomial of order 2.

B. With bandwidth 10 and polynomial of order 3.
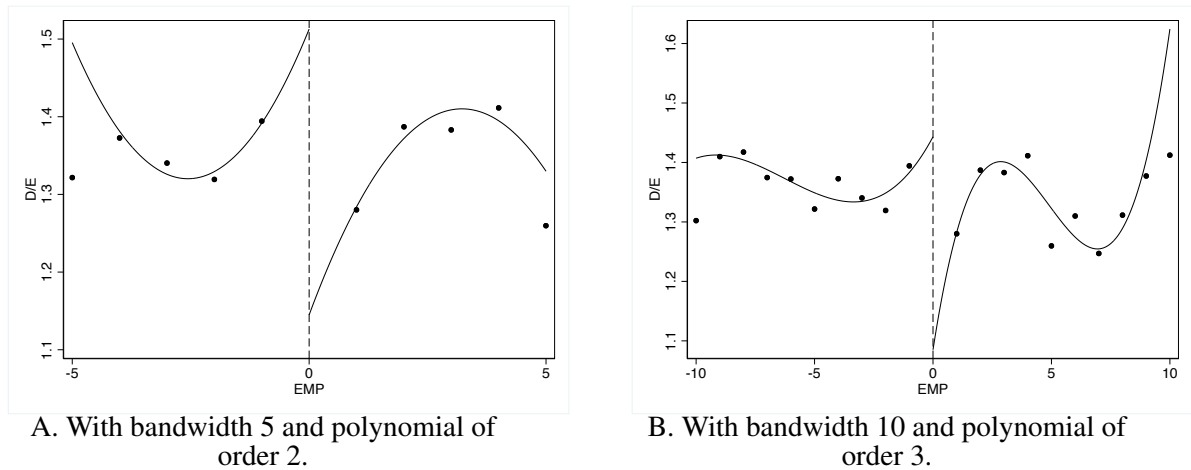
Figure 2 presents the graphical analysis for the capital structure (D/E). The y-axis shows the mean D/E in the respective bin. The x-axis shows the distance to the threshold in number of employees. Positive (negative) bins are (are not) entitled to employee representation at the board level. The number of bins is specified through the IMSE-optimal evenly spaced method using spacing estimators, but the results are consistent under the IMSE-optimal evenly spaced method using polynomial regression, mimicking variance evenly spaced method using spacing estimators and mimicking variance evenly spaced method using polynomial regression. For more detailed information, see `https://rdpackages.github.io`.

A.3

Figure 3. Graphical analysis: Interest expense and pledged assets.
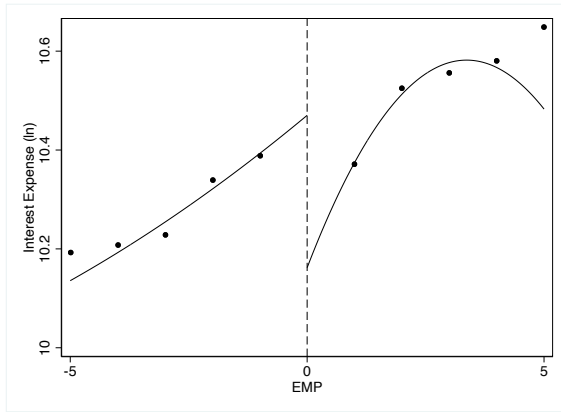
A. With bandwidth 5 and polynomial of order 2.
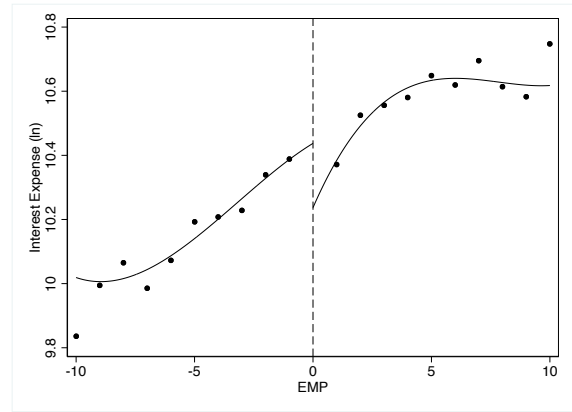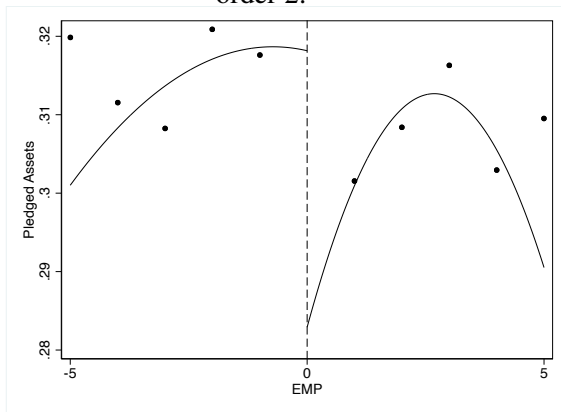
B. With bandwidth 10 and polynomial of order 3.

C. With bandwidth 5 and polynomial of order 2.
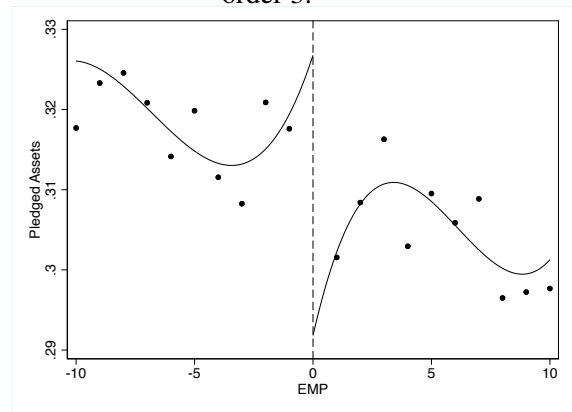
D. With bandwidth 10 and polynomial of order 3.

Figure 3 presents the graphical analysis for *Interest Exp* and *Pledged Assets*. In Figures A and B, the y-axis shows the mean *Interest Exp* in the respective bin. In Figures C and D, the y-axis shows the mean *Pledged Assets* in the respective bin. The x-axis shows the distance to the threshold in number of employees. Positive (negative) bins are (are not) entitled to employee representation at the board level. The number of bins is specified through the IMSE-optimal evenly spaced method using spacing estimators, but results are consistent under the IMSE-optimal evenly spaced method using polynomial regression, mimicking variance evenly spaced method using spacing estimators and mimicking variance evenly spaced method using polynomial regression. For more detailed information, see `https://rdpackages.github.io`.

Figure 4. Graphical analysis: Employee salaries and social security expense.
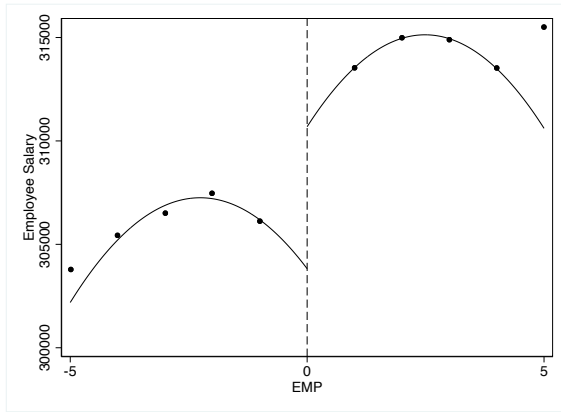
A. With bandwidth 5 and polynomial of
order 2.
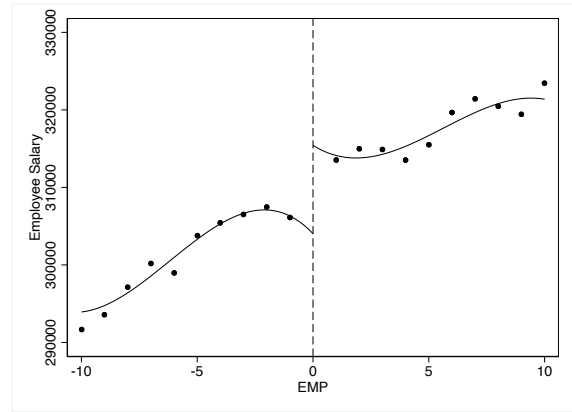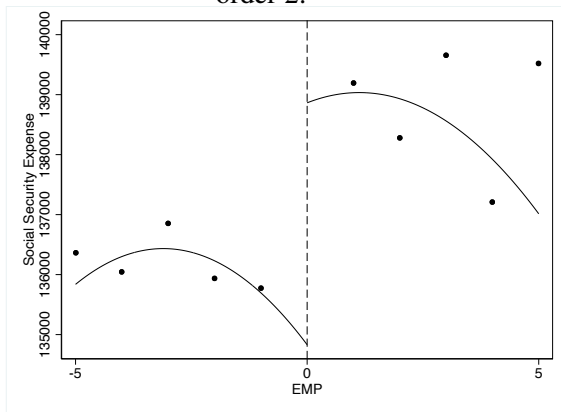
B. With bandwidth 10 and polynomial of
order 3.

C. With bandwidth 5 and polynomial of
order 2.
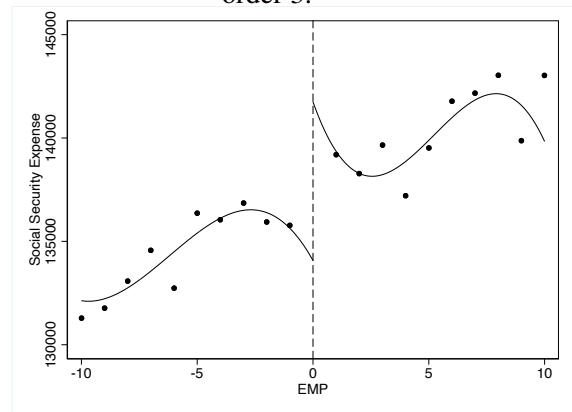
D. With bandwidth 10 and polynomial of
order 3.

Figure 4 presents the graphical analysis for *Employee Salary* and *Social Security*. In Figures A and B, the y-axis shows the mean *Employee Salary* in the respective bin. In Figures C and D, the y-axis shows the mean *Social Security* in the respective bin. The x-axis shows the distance to the threshold in number of employees. Positive (negative) bins are (are not) entitled to employee representation at the board level. The number of bins is specified through the IMSE-optimal evenly spaced method using spacing estimators, but results are consistent under the IMSE-optimal evenly spaced method using polynomial regression, mimicking variance evenly spaced method using spacing estimators and mimicking variance evenly spaced method using polynomial regression. For more detailed information, see `https://rdpackages.github.io`.

Figure 5. Manipulation test of the forcing variable.

A. Distribution of the number of
employees.

B. Density of the forcing variable.
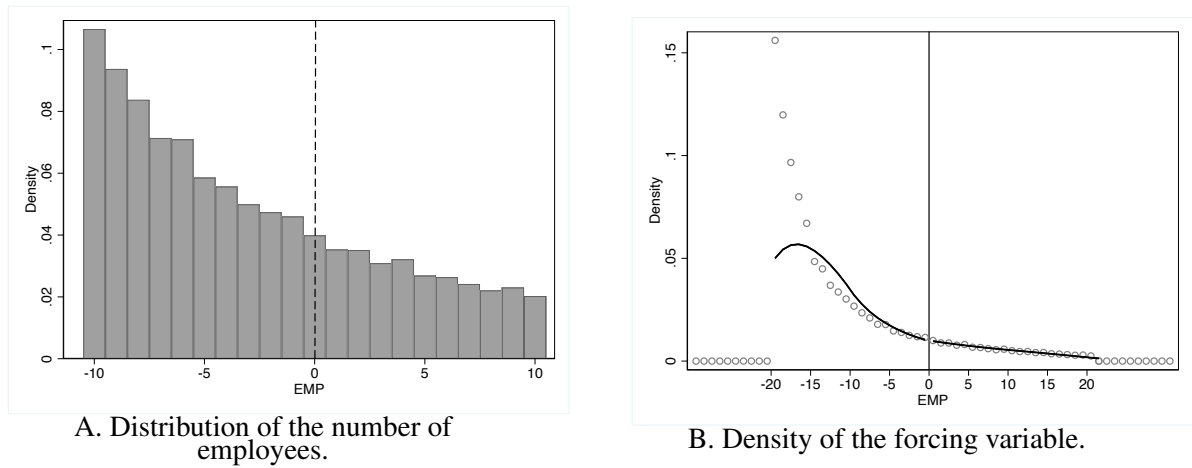
Figure 5 shows the distribution of the forcing variable in Panel A and the estimated density of the forcing variable in Panel B. The x-axes show the distance to the threshold in number of employees. They y-axes show the density of the forcing variable, *EMP*. The figure in Panel B was generated using the code provided by J. McCrary (`https://eml.berkeley.edu/~jmccrary/DCdensity/`).

A.2 Tables

Table 1. SME aggregate figures.

	Firms			Individuals employed			Value added		
	Sweden		EU-28	Sweden		EU-28	Sweden		EU-28
Class size	Number	%	%	Number	%	%	Billion €	%	%
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Micro	699,377	94.6	93	797,617	23.8	29.7	51.9	22.3	20.8
Small	**33,441**	**4.5**	**5.9**	**748,188**	**22.3**	**20.1**	**44.3**	**19.1**	**17.6**
Medium	5,806	0.8	0.9	638,490	19	16.8	45.8	19.7	18
SMEs	738,624	99.9	99.8	2,184,295	65.2	66.6	142	61.2	56.4
Large	1,062	0.1	0.2	1,167,660	34.8	33.4	90.2	38.8	43.6
Total	739,686	100	100	3,351,955	100	100	232.2	100	100

Table 1 shows the number of firms, individuals employed and the value added for each category of firms in the non-financial business economy in Sweden, as well as their corresponding share in Sweden and in the EU-28. The category for each firm's class size are defined as follows: *Micro firms* employ between 0 and 9 individuals, *Small firms* employ between 10 and 49 individuals, *Medium-sized firms* employ between 50 and 249 individuals, and *Large firms* employ 250 or more individuals. Source: 2019 SBA Fact Sheet, Sweden `https://ec.europa.eu/growth/smes/sme-strategy/performance-review_en`

Table 2. Summary statistics.

Panel A			Bandwidth 1			
Variables	N	Mean	SD	P25	P50	P75
D/E	14,415	1.3809	3.4251	0	0.0431	1.1162
Interest Exp	14,415	10.4805	3.373	9.4728	11.3621	12.6761
Pledged Assets	13,872	0.315	0.3141	0.0409	0.2418	0.5016
Employee Salary	12,600	308,950.83	104,608.63	237,690.48	293,452.98	361,397.25
Social Security Exp	12,598	137,030.33	61,094.00	99,307.70	121,833.34	157,758.63
Firm Size	14,415	16.7042	0.9334	16.1083	16.6973	17.3033
Sales	14,415	17.3985	0.7858	16.944	17.3792	17.9168
ROA	14,415	0.0628	0.1692	0.0019	0.0443	0.1173
Sales Growth	14,415	0.0645	0.2694	-0.0543	0.0445	0.1657
Tangibility	14,415	0.754	0.3377	0.5491	0.9579	1
Number of Employees	14,415	25.8684	0.9913	25	25	27

Panel B			Bandwidth 5			
Variables	N	Mean	SD	P25	P50	P75
D/E	74,073	1.3834	3.4375	0	0.0318	1.0976
Interest Exp	74,073	10.4702	3.3805	9.3927	11.3621	12.6603
Pledged Assets	71,146	0.3172	0.3197	0.037	0.2402	0.5043
Employee Salary	64,836	308,512.43	104,422.39	237,760	292,709.02	361,131.47
Social Security Exp	64,839	136,890.05	60,991.71	99,444.45	122,035.71	156,833.33
Firm Size	74,073	16.6748	0.9521	16.0653	16.6631	17.2965
Sales	74,073	17.3686	0.7857	16.9044	17.3457	17.8894
ROA	74,073	0.0608	0.1948	0.0019	0.0441	0.1168
Sales Growth	74,073	0.0645	0.2692	-0.0552	0.0434	0.1621
Tangibility	74,073	0.7551	0.3384	0.5591	0.9612	1
Number of Employees	74,073	25.1794	3.244	22	24	28

Panel C			Bandwidth 10			
Variables	N	Mean	SD	P25	P50	P75
D/E	170,188	1.3925	3.4616	0	0.024	1.0887
Interest Exp	170,188	10.3276	3.4183	9.3057	11.2253	12.539
Pledged Assets	163,353	0.3191	0.3258	0.0371	0.2375	0.5061
Employee Salary	148,213	304,017.65	103,786.91	233,954.55	288,500	356,625
Social Security Exp	148,197	135,395.88	60,263.81	98,500	120,888.89	155,250
Firm Size	170,188	16.5484	0.9842	15.9056	16.5355	17.1891
Sales	170,188	17.2421	0.8231	16.7397	17.2192	17.7813
ROA	170,188	0.061	0.2022	0.0021	0.0446	0.1176
Sales Growth	170,188	0.0632	0.2726	-0.058	0.0427	0.1612
Tangibility	170,188	0.7556	0.3387	0.5588	0.9639	1
Number of Employees	170,188	22.9518	5.8495	18	21	28

Table 2 presents the summary statistics for the variables used in the analysis. Panel A presents the summary statistics for a bandwidth of 1, Panel B presents the summary statistics for a bandwidth of 5, and Panel C presents the summary statistics for a bandwidth of 10. All variables are winsorized at the 1% and 99% levels. All variables are defined in Table 12.

Table 3. Capital structure.

Dependent Variable			D/E			
	(1)	(2)	(3)	(4)	(5)	(6)
Represented	-0.1100*	-0.2726**	-0.3348***	-0.0952	-0.2278*	-0.2943**
	(-1.65)	(-1.98)	(-2.65)	(-1.48)	(-1.71)	(-2.39)
Firm Size				0.6597***	0.6516***	0.6605***
				(9.01)	(16.48)	(22.27)
Sales				-0.6638***	-0.6841***	-0.6686***
				(-7.36)	(-14.56)	(-18.91)
ROA				-2.5919***	-2.0298***	-1.9768***
				(-11.23)	(-9.66)	(-11.47)
Sales Growth				0.5629***	0.5142***	0.5153***
				(4.28)	(8.61)	(12.19)
Tangibility				1.3267***	1.3497***	1.3527***
				(14.59)	(25.79)	(34.51)
Polynomial	None	2	3	None	2	3
Bandwidth	1	5	10	1	5	10
Industry x Year FE?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,415	74,073	170,188	14,415	74,073	170,188
Adjusted R^2	0.026	0.021	0.019	0.072	0.065	0.063

Table 3 shows the effect of having employee representation at the board level on the debt-to-equity ratio (*D/E*). Columns (1) to (3) do not include controls. Columns (7) to (9) include *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility* as controls. Specifications for Columns (1) and (4) have a bandwidth of 1 and do not include linear specifications on either side of the cutoff. Specifications (2) and (5) have a bandwidth of 5 and include quadratic polynomials. Specifications (3) and (6) have a bandwidth of 10 and include cubic polynomials. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Table 12.

Table 4. Interest expense.

Dependent Variable	Interest Expense (ln)					
	(1)	(2)	(3)	(4)	(5)	(6)
Represented	-0.0567	-0.2844**	-0.3335***	-0.1313**	-0.2750**	-0.3269***
	(-0.95)	(-2.25)	(-2.83)	(-2.31)	(-2.29)	(-2.92)
Firm Size				0.9310***	0.9520***	0.9187***
				(15.21)	(27.25)	(37.16)
Sales				0.0032	0.0502	0.0381
				(0.04)	(1.17)	(1.28)
ROA				-2.8777***	-2.1693***	-2.1784***
				(-14.09)	(-10.32)	(-12.38)
Sales Growth				0.3689***	0.2789***	0.2577***
				(3.50)	(5.28)	(7.11)
Tangibility				0.7190***	0.7097***	0.7191***
				(6.80)	(11.39)	(15.73)
Polynomial	None	2	3	None	2	3
Bandwidth	1	5	10	1	5	10
Industry x Year FE?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,415	74,073	170,188	14,415	74,073	170,188
Adjusted R^2	0.078	0.074	0.070	0.158	0.156	0.147

Table 4 shows the effect of having employee representation at the board level on interest expense (*Interest Exp*). Columns (1) to (3) do not include controls. Columns (4) to (6) include *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility* as controls. Specifications for Columns (1) and (4) have a bandwidth of 1 and do not include linear specifications on either side of the cutoff. Specifications (2) and (5) have a bandwidth of 5 and include quadratic polynomials. Specifications (3) and (6) have a bandwidth of 10 and include cubic polynomials. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Table 12.

Table 5. Pledged assets.

Dependent Variable	Pledged to Total Assets					
	(1)	(2)	(3)	(4)	(5)	(6)
Represented	-0.0148**	-0.0357***	-0.0362***	-0.0115**	-0.0305**	-0.0321***
	(-2.51)	(-2.86)	(-3.13)	(-2.00)	(-2.50)	(-2.85)
Firm Size				0.0118*	0.0126***	0.0121***
				(1.87)	(3.29)	(4.23)
Sales				-0.0301***	-0.0275***	-0.0244***
				(-3.84)	(-5.87)	(-7.16)
ROA				-0.2131***	-0.1580***	-0.1489***
				(-9.93)	(-8.40)	(-10.33)
Sales Growth				-0.0624***	-0.0584***	-0.0678***
				(-5.40)	(-10.07)	(-17.01)
Tangibility				0.1552***	0.1501***	0.1520***
				(16.10)	(25.55)	(34.09)
Polynomial	None	2	3	None	2	3
Bandwidth	1	5	10	1	5	10
Industry x Year FE?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,872	71,146	163,353	13,872	71,146	163,353
Adjusted R^2	0.068	0.060	0.055	0.115	0.098	0.093

    Table 5 shows the effect of having employee representation at the board level on pledged assets (*Pledged Assets*). Columns (1) to (3) do not include controls. Columns (4) to (6) include *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility* as controls. Specifications for Columns (1) and (4) have a bandwidth of 1 and do not include linear specifications on either side of the cutoff. Specifications (2) and (5) have a bandwidth of 5 and include quadratic polynomials. Specifications (3) and (6) have a bandwidth of 10 and include cubic polynomials. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Table 12.

Table 6. Employee salary.

Dependent Variable	Employee Salary					
	(1)	(2)	(3)	(4)	(5)	(6)
Represented	5,534.4814***	6,447.4043*	8,231.7920***	647.8851	5,550.7769*	6,806.2695**
	(3.33)	(1.85)	(2.59)	(0.44)	(1.79)	(2.40)
Firm Size				16,778.8672***	16,371.2666***	15,299.0723***
				(9.36)	(16.30)	(20.82)
Sales				36,861.1562***	36,528.5742***	35,723.6758***
				(15.32)	(26.42)	(35.87)
ROA				-43,877.4883***	-28,411.9395***	-29,070.8008***
				(-7.38)	(-6.94)	(-10.84)
Sales Growth				1,856.4703	-3,736.2878**	-2,664.0845**
				(0.53)	(-2.25)	(-2.33)
Tangibility				-25,083.0703***	-25,063.9551***	-22,695.6113***
				(-8.36)	(-14.24)	(-17.95)
Polynomial	None	2	3	None	2	3
Bandwidth	1	5	10	1	5	10
Industry x Year FE?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,599	64,836	148,213	12,599	64,836	148,213
Adjusted R^2	0.332	0.337	0.341	0.473	0.472	0.473

Table 6 shows the effect of having employee representation at the board level on the salary of employees (*Employee Salary*). Columns (1) to (3) do not include controls. Columns (4) to (6) include *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility* as controls. Specifications for Columns (1) and (4) have a bandwidth of 1 and do not include linear specifications on either side of the cutoff. Specifications (2) and (5) have a bandwidth of 5 and include quadratic polynomials. Specifications (3) and (6) have a bandwidth of 10 and include cubic polynomials. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Table 12.

Table 7. Social security expense.

Dependent Variable	Social Security Exp					
	(1)	(2)	(3)	(4)	(5)	(6)
Represented	2,515.2712**	3,889.0381*	5,281.2261**	-380.8221	3,680.8860*	4,965.5640***
	(2.36)	(1.74)	(2.56)	(-0.40)	(1.84)	(2.70)
Firm Size				16,013.6709***	15,550.0723***	15,073.0820***
				(12.48)	(23.67)	(30.85)
Sales				17,996.7031***	17,850.6016***	17,144.4746***
				(10.23)	(20.60)	(26.81)
ROA				-11,879.7168***	-4,957.3667***	-6,698.8042***
				(-3.16)	(-2.73)	(-5.63)
Sales Growth				-18,683.3535***	-20,829.6270***	-19,572.8066***
				(-7.82)	(-19.44)	(-26.58)
Tangibility				-22,989.6660***	-20,744.8887***	-19,386.8848***
				(-11.24)	(-17.07)	(-21.97)
Polynomial	None	2	3	None	2	3
Bandwidth	1	5	10	1	5	10
Industry x Year FE?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,597	64,839	148,197	12,597	64,839	148,197
Adjusted R^2	0.171	0.179	0.177	0.341	0.342	0.337

Table 7 shows the effect of having employee representation at the board level on social security expense (*Social Security Exp*). Columns (1) to (3) do not include controls. Columns (4) to (6) include *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility* as controls. Specifications for Columns (1) and (4) have a bandwidth of 1 and do not include linear specifications on either side of the cutoff. Specifications (2) and (5) have a bandwidth of 5 and include quadratic polynomials. Specifications (3) and (6) have a bandwidth of 10 and include cubic polynomials. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Table 12.

Table 8. Information channel.

Dependent Variable			D/E	
	Growth Firm	Mature Firm	High Complexity	Low Complexity
	(1)	(2)	(3)	(4)
Represented	-0.2975**	-0.2370	-0.6263***	0.0039
	(-2.06)	(-1.19)	(-3.56)	(0.02)
Firm Size	0.7768***	0.5567***	0.6751***	0.6622***
	(21.58)	(15.78)	(16.83)	(17.50)
Sales	-0.8183***	-0.5254***	-0.6806***	-0.6686***
	(-18.28)	(-12.10)	(-13.64)	(-14.67)
ROA	-2.2202***	-2.4896***	-1.9366***	-2.5817***
	(-6.89)	(-11.98)	(-9.15)	(-4.91)
Sales Growth	0.6571***	0.2187***	0.4938***	0.4533***
	(11.00)	(3.46)	(7.78)	(6.43)
Tangibility	1.4240***	1.1919***	1.4106***	1.1678***
	(33.58)	(24.45)	(26.16)	(26.81)
Polynomial	3	3	3	3
Bandwidth	10	10	10	10
Industry x Year FE?	Yes	Yes	Yes	Yes
Observations	92,701	60,225	66,265	78,033
Adjusted R^2	0.077	0.061	0.063	0.082

Table 8 shows how the effect of having employee representation at the board level varies across different levels of growth and information complexity. *Growth Firm* indicates firms having sales growth above the median sales growth of their industry by year. *Mature Firm* indicates firms having sales growth below the median sales growth of their industry by year. *High Complexity* identifies firms having a level of accruals above the median accruals of their industry by year. *Low Complexity* identifies firms having a level of accruals below the median accruals of their industry by year. All specifications include *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility* as controls. All specifications have a bandwidth of 10 and include cubic polynomials. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. The rest of the variables are defined in Table 12.

Table 9. Covariate balance.

Panel A	Bandwidth 1				
Dependent Variable	**Firm Size**	**Sales**	**ROA**	**Sales Growth**	**Tangibility**
	(1)	(2)	(3)	(4)	(5)
Represented	0.0714***	0.0764***	-0.0042	0.0009	0.0031
	(5.26)	(6.66)	(-0.86)	(0.23)	(0.61)
Polynomial	None	None	None	None	None
Industry x Year FE?	Yes	Yes	Yes	Yes	Yes
Observations	22,222	22,170	22,207	22,181	21,561
Adjusted R^2	0.150	0.111	-0.001	0.024	0.053

Panel B	Bandwidth 5				
Dependent Variable	**Firm Size**	**Sales**	**ROA**	**Sales Growth**	**Tangibility**
	(1)	(2)	(3)	(4)	(5)
Represented	0.0330	0.0253	-0.0037	0.0013	0.0060
	(1.34)	(1.22)	(-0.45)	(0.19)	(0.67)
Polynomial	2	2	2	2	2
Industry x Year FE?	Yes	Yes	Yes	Yes	Yes
Observations	83,969	83,776	83,905	83,839	81,518
Adjusted R^2	0.164	0.132	0.009	0.023	0.053

Panel C	Bandwidth 10				
Dependent Variable	**Firm Size**	**Sales**	**ROA**	**Sales Growth**	**Tangibility**
	(1)	(2)	(3)	(4)	(5)
Represented	0.0177	0.0301	-0.0049	0.0064	0.0064
	(0.78)	(1.58)	(-0.57)	(1.02)	(0.77)
Polynomial	3	3	3	3	3
Industry x Year FE?	Yes	Yes	Yes	Yes	Yes
Observations	183,450	183,042	183,305	183,160	178,078
Adjusted R^2	0.193	0.178	0.012	0.022	0.053

Table 9 presents the covariate balance under the three bandwidths. Specifications in Panel A have a bandwidth of 1 and do not include linear specifications on either side of the cutoff. Specifications in Panel B have a bandwidth of 5 and include quadratic polynomials. Specifications in Panel C have a bandwidth of 10 and include cubic polynomials. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Table 12.

Table 10. Placebo tests.

Panel A	Bandwidth 1			
Dependent Variable	**D/E**			
Cutoff	**22**	**23**	**29**	**30**
	(1)	(2)	(3)	(4)
Represented	0.0111	-0.0373	-0.0066	-0.0766
	(0.20)	(-0.69)	(-0.10)	(-1.10)
Firm Size	0.7000***	0.5825***	0.6785***	0.6620***
	(11.00)	(9.85)	(9.24)	(8.40)
Sales	-0.7186***	-0.6410***	-0.7472***	-0.6687***
	(-9.52)	(-8.75)	(-8.44)	(-6.62)
ROA	-1.3968***	-2.4643***	-2.9199***	-1.6554***
	(-4.12)	(-8.41)	(-11.43)	(-3.36)
Sales Growth	0.6166***	0.5881***	0.4287***	0.3483**
	(5.46)	(5.09)	(3.05)	(2.51)
Tangibility	1.3082***	1.3180***	1.4050***	1.4676***
	(16.07)	(16.51)	(13.11)	(14.17)
Polynomial	None	None	None	None
Industry x Year FE?	Yes	Yes	Yes	Yes
Observations	19,205	18,257	11,903	10,270
Adjusted R^2	0.058	0.067	0.067	0.069

Panel B	Bandwidth 5			
Dependent Variable	**D/E**			
Cutoff	**22**	**23**	**29**	**30**
	(1)	(2)	(3)	(4)
Represented	-0.0199	0.0092	0.1511	-0.0502
	(-0.17)	(0.08)	(1.06)	(-0.34)
Firm Size	0.6743***	0.7049***	0.6051***	0.6548***
	(18.59)	(18.34)	(14.25)	(14.79)
Sales	-0.6859***	-0.7391***	-0.6525***	-0.6751***
	(-15.73)	(-16.17)	(-13.28)	(-13.07)
ROA	-1.8889***	-1.9116***	-2.3276***	-2.1179***
	(-8.35)	(-7.54)	(-13.32)	(-9.86)
Sales Growth	0.5465***	0.5528***	0.4450***	0.4103***
	(10.65)	(10.28)	(7.00)	(6.06)
Tangibility	1.3526***	1.3606***	1.3358***	1.3809***
	(29.07)	(28.18)	(23.62)	(23.48)
Polynomial	2	2	2	2
Industry x Year FE?	Yes	Yes	Yes	Yes
Observations	105,713	96,277	59,471	54,919
Adjusted R^2	0.063	0.065	0.065	0.066

Panel C	Bandwidth 10			
Dependent Variable	**D/E**			
Cutoff	**22**	**23**	**29**	**30**
	(1)	(2)	(3)	(4)
Represented	0.0964	0.1020	0.1138	-0.1816
	(0.91)	(0.97)	(0.87)	(-1.36)
Firm Size	0.7307***	0.7096***	0.6343***	0.6346***
	(29.09)	(26.97)	(19.40)	(18.75)
Sales	-0.6883***	-0.6909***	-0.6718***	-0.6725***
	(-23.56)	(-22.43)	(-17.34)	(-16.84)
ROA	-1.8775***	-1.8798***	-1.9383***	-2.0389***
	(-12.50)	(-11.34)	(-9.29)	(-12.62)
Sales Growth	0.5156***	0.5329***	0.5054***	0.5149***
	(14.92)	(14.55)	(10.72)	(10.54)
Tangibility	1.3429***	1.3473***	1.3390***	1.3446***
	(40.67)	(39.11)	(30.75)	(30.44)
Polynomial	3	3	3	3
Industry x Year FE?	Yes	Yes	Yes	Yes
Observations	253,913	227,612	130,938	121,015
Adjusted R^2	0.066	0.066	0.062	0.063

Table 10 presents the placebo tests for placebo cutoffs set at 22, 23, 29 and 30 employees. Specifications in Panel A have a bandwidth of 1 and do not include linear specifications on either side of the cutoff. Specifications in Panel B have a bandwidth of 5 and include quadratic polynomials. Specifications in Panel C have a bandwidth of 10 and include cubic polynomials. All specifications include *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility* as controls. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Table 12.

Table 11. Cross-sectional tests.

Dependent Variable	D/E			
	Low Unionization	High Unionization	Cash Constrained	Not Cash Constrained
	(1)	(2)	(3)	(4)
Represented	-0.4235***	-0.0590	-0.3497**	0.0084
	(-2.60)	(-0.33)	(-2.07)	(0.11)
Firm Size	0.6602***	0.7129***	0.7995***	0.1004***
	(19.43)	(12.29)	(20.45)	(4.31)
Sales	-0.6015***	-0.9098***	-0.9343***	-0.1507***
	(-14.89)	(-13.44)	(-18.87)	(-6.18)
ROA	-1.5065***	-5.0744***	-2.1737***	-0.5524***
	(-9.67)	(-21.50)	(-7.44)	(-7.53)
Sales Growth	0.4832***	0.8228***	0.6020***	0.2074***
	(9.12)	(11.95)	(10.25)	(5.95)
Tangibility	1.4335***	1.1106***	1.6551***	0.2478***
	(29.37)	(17.77)	(32.00)	(9.92)
Polynomial	3	3	3	3
Bandwidth	10	10	10	10
Industry x Year FE?	Yes	Yes	Yes	Yes
Observations	110,290	59,898	108,002	52,548
Adjusted R^2	0.064	0.082	0.080	0.031

Table 11 shows how the effect of having employee representation at the board level varies across different levels of unionization and cash. *Low Unionization* covers firms in industries with a low level of unionization (white collar), and *High Unionization* covers firms in industries with a high level of unionization (blue collar). *Cash Constrained* indicates firms having a cash-to-assets ratio below the median cash-to-assets ratio of their industry by year. *Not Cash Constrained* indicates those firms having a cash-to-assets ratio above the median cash-to-assets ratio of their industry by year. All specifications include *Firm Size*, *Sales*, *ROA*, *Sales Growth* and *Tangibility* as controls. All specifications have a bandwidth of 10 and include cubic polynomials. All columns include industry-times-year fixed effects. T-statistics are in parentheses. Standard errors are robust and clustered at the firm level. All variables are winsorized at the 1% and 99% levels. ***, ** and * represent significance at the 1%, 5% and 10% levels, respectively. The rest of the variables are defined in Table 12.

Table 12. Variable definitions.

Variable	Definition
D/E	Sum of the short- and long-term liabilities to credit institutions divided by total equity.
$Interest\ Exp_{it}$	Natural logarithm of one plus the interest paid to credit institutions.
$Pledged\ Assets_{it}$	Sum of pledged assets, including floating charges, real state mortgages and other pledged assets, divided by total assets.
$Employee\ Salary_{it}$	Salaries and compensation for employees divided by the number of employees.
$Social\ Security\ Exp_{it}$	Social security expense divided by the number of employees.
$Firm\ Size_{it}$	Natural logarithm of total assets.
$Sales_{it}$	Natural logarithm of net sales.
ROA_{it}	Net profit divided by total assets at the beginning of the year.
$Sales\ Growth_{it}$	Change in net sales divided by net sales at the beginning of the year.
$Tangibility_{it}$	Tangible fixed assets divided by total fixed assets.