Worker Representatives*

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Abstract

We study the representation of workers through professional worker representatives, focusing on the selection of German works council representatives and their impact on worker outcomes. We examine differences in the effects of blue- and white-collar representatives, motivated by the observation that blue- and white-collar workers exhibit different preferences, e.g., concerning job security. Using retirement-IV and event-study designs, we find that electing blue-collar representatives significantly reduces involuntary separations, consistent with their stronger emphasis on job security compared to their white-collar counterparts, and has limited effects on the wages of the represented. We further show that becoming a professional representative yields substantial wage gains for blue-collar workers, and that both blue- and white-collar representatives are positively selected in terms of pre-election earnings and person fixed effects. In terms of descriptive representation, we document that blue-collar workers are close to proportionally represented on works councils, in contrast to other domains.

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1 Introduction

Blue-collar workers are underrepresented in many domains of power, ranging from the US Congress (Carnes, 2013; Feigenbaum et al., 2018; Carnes and Lupu, 2023) to the highest echelons of corporations (Ellersgaard et al., 2013). A large literature has examined who political and corporate leaders are (Hartmann, 2000, 2006; Dal Bó et al., 2017) and how they shape outcomes in their respective spheres (Jones and Olken, 2005; Malmendier and Tate, 2005; Bennedsen et al., 2020; Acemoglu et al., 2022). By comparison, the economics literature has paid far less attention to who represents workers and to how the composition of worker representatives matters (though see Boudreau et al., 2025; Corradini et al., 2025, on union leaders). This is a notable gap given the importance of unions and worker representation for wages, working conditions, and the social safety net (Acemoglu et al., 2001; Korpi, 2006)—and given a long tradition that places the divide between blue- and white-collar workers at the very center of how representation operates. A line of work going back at least to Raimon and Stoikov (1969), Hamermesh (1971), and Solnick (1985) treats the distinction between blue- and white-collar unions as the central organizing dimension of worker representation, while a parallel literature in comparative political economy and political science emphasizes blue-collar workers' under-representation and their distinct preferences over labor-market policy (Becher and Pontusson, 2011; Ibsen and Thelen, 2017; Cronert and Forsén, 2021). Yet despite the salience of this divide, there is limited direct evidence on how the blue- versus white-collar status of worker representatives shapes the outcomes of the workers they represent.

In this paper, we study both the descriptive and the substantive representation (Pitkin, 1967) of blue-collar workers among professional (i.e., full-time) members of German works councils (*Betriebsräte*)—one of the most powerful codetermination institutions in the world (Freeman and Lazear, 1995; Jäger et al., 2022a,b). Works councils are also a central institution of shop-floor worker voice across Europe.[1] We ask two questions: to what extent are blue-collar workers represented on works councils, and how does blue-collar representation affect worker outcomes? Answering the second question lets us assess whether representatives advance the distinct policy preferences of the workers they represent.

In Germany, works councilors are elected from the workforce by non-managerial employees for four-year terms (with the possibility of re-election). Competing unions and employee groups—and, in smaller firms, individual workers—stand for election. Works councils hold rights to information, consultation, and codetermination over a range of personnel and business decisions, including company restructuring, layoffs, working conditions, and the introduction of new technologies; they can also propose improvements to working conditions, negotiate firm-specific bargaining agreements, and frequently supply worker-elected directors to firms with board-level codetermination.[2] Our analysis centers on *professional* worker representatives (*freigestellte Betriebsräte*), the subset of councilors released from their regular jobs to focus entirely on the representative role. We refer to the remaining members (*nicht-freigestellte Betriebsräte*), who serve pro bono, as part-time

[1] Beyond Germany, works councils exist, for example, in the Netherlands (*Ondernemingsraad*), Austria (*Betriebsrat*), or Spain (*Comité de Empresa*). Many other European countries have joint shop-floor committees with representatives from the worker side and the firm side, for example, Belgium (*Ondernemingsraad/Conseil d'Entreprise*), Denmark (*Samarbejdsudvalg*), France (*Comité social et économique*), and Norway. In Continental Europe, one exception is Sweden where only unions offer workplace representation and no structure similar to works councils exists (Oesingmann, 2015). At the EU level, European Works Councils exist in multinational firms (Council Directive 94/45/EC).

[2] We view board-level representation not as a confounder but as a potential mechanism through which works councils exert influence: a more professionalized works council may be better positioned to leverage board-level representation of workers effectively.

worker representatives.[3]

To study blue-collar representation and its effects, we draw on and combine several datasets. Our main dataset is the Integrated Employment Biographies (IEB), a panel of social security records that lets us track employment trajectories over more than 45 years and observe workforce composition within establishments. The IEB does not record part-time representatives, but its detailed occupation and industry information allows us to identify professional representatives—a measure we subject to several validation checks and cross-validate against the linked employer-employee LIAB data. We classify blue-collar workers using the occupational categories of Blossfeld (1985)—simple manual, simple service, qualified manual, technical, and agricultural occupations—and consider routine occupations as well as a narrow blue-collar classification excluding simple service occupations as alternative definitions.[4] We complement the IEB with the German Socio-Economic Panel (SOEP), which provides rich information on workers' preferences, personality traits, and employment histories (Goebel et al., 2019), and with annual reports of the Metal Union (IGM) since 1952, which record workforce and works council composition for establishments covered by IGM bargaining agreements. Together, these data allow us to estimate the effects of blue-collar representation and to paint a comprehensive picture of blue-collar representation in Germany and how it has changed over time.

We begin with the *descriptive* representation (Pitkin, 1967) of blue-collar workers on works councils. Examining trends since the 1970s, we document that blue-collar representation has on average been broadly proportional throughout the period, with a modest under-representation in the 1970s that closed over time. This near-proportional representation is striking against the backdrop of blue-collar workers' under-representation in other domains of power: not only are they strongly under-represented in management over the same period, but in representative survey data they also report a markedly lower sense of political influence and greater distance from political decision-makers than their white-collar counterparts, which we document using the SOEP. The close-to-proportional aggregate, however, masks substantial heterogeneity across establishments, with a non-negligible share of workers in establishments that exhibit sizable representation gaps.

We then turn to *substantive* representation (Pitkin, 1967) and ask whether blue-collar representatives advance the policy goals of blue-collar workers. Motivating this question, blue-collar workers express substantially greater concern about job loss and place a markedly stronger emphasis on job protection than their white-collar counterparts—consistent with work on the blue-/white-collar divide within unions and on the differential employment risk facing different groups of workers (Becher and Pontusson, 2011; Ibsen and Thelen, 2017; Cronert and Forsén, 2021). Using representative SOEP data from 1999 to 2019, we show that blue-collar workers exhibit higher levels of economic anxiety and perceive greater anticipated unemployment risk, are substantially more worried about their job security and economic situation, and report more stress associated with anticipated job loss. These worries are grounded in differential experience: blue-collar workers are 38% (10.2ppt) more likely to have experienced unemployment in the past—mirroring evidence that low-wage workers suffer larger wage-premium losses after displacement (Helm et al., 2023)—and they are 11% (1.9ppt) more likely to expect to lose their job within the next two years.[5] A natural concern is that

[3]Part-time worker representatives are not fully released from their regular job, but only temporarily exempt when needed for works council duties.

[4]Appendix Table A1 shows the 15 largest 3-digit occupations for blue- and white-collar workers according to our main definition.

[5]See also Gulyas and Pytka (Forthcoming) for evidence on the differential cost of job loss from Austria.

these gaps vanish among representatives, who enjoy strong job protection while in office. In an analysis of preferences among elected works council members, we find that the differences largely persist, with point estimates often close to those for the overall workforce, albeit with wider confidence intervals. Blue-collar representatives thus plausibly bargain more forcefully for job-preserving policies.

To identify the effects of blue-collar representation, we leverage two complementary designs. The first is an event-study that exploits large changes in works council composition at the four-yearly elections: simply put, we compare establishments whose share of professional blue-collar representatives rose sharply in an election year to matched control establishments with similar characteristics but no comparable change in representation. The second is an instrumental-variables (IV) strategy that relies on retirement-induced changes in council composition, following Acemoglu et al. (2022): we compare establishments with similar worker structures over time, one of which has a blue-collar representative retiring and the other a white-collar representative, so that the former is more likely to transition toward white-collar representation while the latter is more likely to transition toward blue-collar representation. Both designs identify the causal effect of changes in the *composition* of representation, conditional on the presence of a works council; they should not be read as evidence on the effect of introducing a works council where none exists. Our focus is thus on an empirically important but understudied margin—how the background and preferences of representatives shape outcomes within workplaces that already have a council—complementing the existing literature on the presence versus absence of worker representation.

Electing blue-collar representatives significantly reduces worker turnover, and the reduction is concentrated entirely in *involuntary* separations. When the share of professional blue-collar representatives rises by more than 33ppt, turnover falls by about 0.8ppt from a base of 11%, for blue- and white-collar workers alike. Decomposing this effect, we find no change in voluntary turnover (moves to other employers) and that the entire decline is driven by reduced involuntary separations into unemployment and by reductions in plant closures. That voluntary turnover is unchanged suggests that blue-collar representation does not alter the overall perceived utility of working at the establishment, while the drop in involuntary separations is consistent with blue-collar representatives securing greater employment protection for the workers they represent—both white- and blue-collar. By contrast, we find only limited evidence of wage effects. Works councils could in principle affect wages through several channels: (i) by serving directly as the firm's counterparty in establishment-specific bargaining agreements, (ii) by enforcing sectoral or firm-specific collective bargaining agreements, and (iii) through their influence on technology choice and productivity.[6] Yet across the wage distribution we estimate null or, if anything, small *positive* effects. These run counter to the negative compensating differentials that an insurance view of the increased employment protection would predict (in which workers pay for protection through lower wages; see, e.g., Malcomson, 1983). We caution that the wage results are less conclusive than the separation results, as they vary more across research designs.

To organize and interpret these findings, we develop a simple model of wage and employment bargaining between a firm and a heterogeneous worker representative, extending Manning's 1987 two-stage Nash bargaining framework. The model's key assumption is that blue-collar representatives carry greater bargaining power over *employment*, reflecting the stronger job security concerns of the blue-collar workers they represent;

[6] Works councils can also shape whether a firm accedes to collective bargaining in the first place, and the council's composition can be decisive. At Tesla's *Gigafactory* near Berlin, a white-collar-dominated council has resisted IG Metall's push for a collective bargaining agreement, leaving the plant without union wage coverage (Kramme, 2026).

a novel "bribing" stage then lets the firm transfer resources to the representative to attenuate that bargaining power. The model can rationalize four empirical patterns at once: (i) electing a blue-collar representative raises employment and reduces involuntary separations, (ii) it leaves the wages of the represented workers unchanged, (iii) becoming a professional representative raises the representative's own earnings, and (iv) those earnings gains are larger for blue-collar representatives. The model thus ties the effects on represented workers together with the returns to becoming a representative.

Consistent with the model predictions, becoming a professional representative brings substantial earnings gains and greater employment security. Four years after an election, representatives earn about 7% more than a comparison group of similar coworkers at their firm, and these gains are concentrated among blue- rather than white-collar workers.[7] The wage increases could, in principle, also reflect human capital accumulation by representatives, though the wage premium emerges within the first few years of becoming a professional representative, which is difficult to reconcile with a gradual human-capital-accumulation story and more consistent with the model's "bribing" interpretation.[8]

We also assess whether differential ability could itself drive our results, describe the type of worker drawn to these roles, and explain the differences in the effects of white- and blue-collar representatives. Professional councilors are positively selected on earnings potential (mirroring results for politicians in Dal Bó et al., 2017): they have about 5% higher pre-election wages and 10% higher person fixed effects than the median worker at their establishment, whereas part-time councilors look similar to their coworkers. Crucially, this positive selection is similar for blue- and white-collar representatives, which makes differential ability an unlikely explanation for the heterogeneous effects we document.[9]

Our findings contribute to several additional strands of the literature. First, we add to a growing body of research on the characteristics of worker representatives and union leaders and how these shape union policy and worker outcomes (Breda, 2016; Boudreau et al., 2025; Corradini et al., 2025).[10] Boudreau et al. (2025) study union leaders in Myanmar's garment sector and find them positively selected on education and grit and lower in neuroticism than the workers they represent, and show experimentally that they raise worker mobilization through consensus-building; Corradini et al. (2025) find that a gender quota among Brazilian

[7] Our analysis of earnings gains focuses on professional worker representatives. Earlier work based on the German Socio-Economic Panel, by Goerke and Pannenberg (2024) documents that works council membership (including *both* part-time and professional representatives) is on average not associated with a salary premium after election. Brébion (2022) documents a salary premium of approximately 4.6% in manufacturing and a salary penalty of 3.7% in the service sector. See also Bourdieu et al. (2024) for evidence on the compensation of French union representatives, and a model with strategic discrimination or favoritism by the firm against union delegates.

[8] Direct payments to "buy" the goodwill of individual works council members are by their nature difficult to document systematically, but prominent cases illustrate that the underlying incentive structure is empirically relevant in the German setting. At Volkswagen, the long-serving chair of the works council received annual compensation of up to EUR 750,000 (Der Spiegel, 2021). A works council member at Porsche earned between EUR 400,000 and EUR 500,000 annually (Preuß, 2019). In 2024, the German parliament passed a new law regulating the pay of works council members in part in response to such compensation practices.

[9] Beyond earnings potential, representatives have substantially higher political interest and engagement and lean slightly more to the left; they score higher on the Big Five traits of openness and extraversion and report lower neuroticism than the workers they represent, but are similar on the remaining Big Five traits as well as on altruistic preferences and locus of control (see also Boudreau et al., 2025, for evidence on union leaders from Myanmar's garment sector).

[10] Our paper also contributes to a longer tradition of studying worker representatives in industrial relations, including on the blue- and white-collar margin (Daniel and Millward, 1983; Stevens and Millward, 1986), and contributes estimates of the causal effects of representative composition on the blue- and white-collar margin on worker outcomes. See also Kersley et al. (2006, pp. 144–177), who analyze characteristics of non-union representatives based on the 2004 British Workplace Employment Relations Survey.

union leaders raises female-centric amenities in affected establishments. Second, our analysis of selection into worker representation complements work on selection into union *membership* (Farber et al., 2021; Batut et al., 2024; Dodini et al., 2023b,a, 2024). Our setting differs in an important respect: while a majority of works councilors are union members (56% in our SOEP sample), *all* eligible employees in an establishment can vote in council elections regardless of their individual union status. Third, we contribute to the literature on the effects of German works councils *per se*, which typically compares establishments with and without worker representation (see Addison, 2009; Jäger et al., 2022a,b, for summaries) and has documented a positive relationship between the presence of a works council and employment protection (Hirsch et al., 2010).[11] We complement this work by focusing on a different margin—rather than comparing the presence versus absence of representation, we examine how outcomes vary with the composition of representatives within establishments that already have a council—and relate to Findeisen et al. (2025), who study robot adoption in German firms and find that works councils shield workers, particularly older workers and workers in routine occupations, from layoffs. Fourth, we speak to the literature on the structural shift of employment away from manufacturing and blue-collar work witnessed in many countries (Acemoglu et al., 2016; Autor et al., 2019; Helm et al., 2023): while blue-collar representation by works councilors has remained stable, the share of German workers covered by works councils has fallen by around 10 percentage points over the last three decades (Ellguth and Kohaut, 2021). Finally, our evidence highlights how institutions interact in shaping economic outcomes—here, works council representation and employment protection (cf. Hall and Soskice, 2001).

The remainder of the paper is organized as follows. Section 2 describes the institutional setting of worker representation in Germany and the data we use. Section 3 characterizes worker representatives in comparison to the worker populations they represent. Section 4 develops our theoretical framework for how heterogeneous worker representatives affect wages, employment, and representative compensation. Section 5 presents the causal effects of electing blue-collar workers as professional representatives, together with the evidence on the return to becoming a representative. The last section concludes.

2 Context and Data

2.1 Works Councils and Worker Representation in Germany

Two Channels of Worker Representation: Sectoral Bargaining and Codetermination Worker representation in Germany operates through two distinct channels: sectoral bargaining and codetermination. Sectoral bargaining refers to the negotiation of collective agreements at the industry level to arrange wage floors and working conditions. Codetermination gives workers a voice in the decision-making process through works councils and by allowing them to elect representatives to sit on the supervisory boards of larger companies.

Sectoral Bargaining Sectoral bargaining in Germany is organized through a system of collective bargaining agreements negotiated between unions and employers' associations (or individual firms). The agreements

[11] A recent, albeit non-representative survey covering the years 2020-2022 finds that in about 20% of cases establishments engage in obstruction of some sort (Behrens and Dribbusch, 2024). We believe that a more thorough investigation of the dynamics of works council formation is an important avenue for future research.

are specific to particular sectors and regions (typically the state level) and cover a range of issues related to working conditions and wages. The negotiations take place between representatives of the unions and the employers. Once an agreement is reached, it binds employers who negotiated an individual agreement or who are part of an employer association concluding an agreement. Coverage through sectoral or firm-level bargaining agreements has declined from around 70% of workers covered in the 1990s to 51% of workers covered by 2020 (Ellguth and Kohaut, 2021).

Works Councils: History, Legal Basis, and Relationship to Unions Works councils are an institution to provide worker voice and codetermination at the establishment and firm level. They were first introduced in Weimar Germany through an agreement between moderate trade unions and industry leaders and then codified into law through the Works Council Act of 1920. Their modern form was codified in the aftermath of World War II through the Works Constitution Act (*Betriebsverfassungsgesetz* or *BetrVG*) of 1952.

The Works Constitution Act gives workers in establishments with at least five workers a right to form a works council. The size and responsibilities of the works council are a function of the establishment size, see Appendix Table A2 for details. Our analysis of the administrative data will focus on establishments with more than 200 employees where at least one works council member has a right to be released from their contractual duties to work full-time as a representative for the duration of their term. These professional worker representatives are elected by and from within the overall works council and tend to take on more active and managing roles in the works council.

Works councils are related to but distinct from unions. Works council members are directly or indirectly elected by the non-managerial workforce and not appointed by the union (though unions can run in works council elections, see more on elections below). Unions generally promote works councils and view them as an important avenue of worker voice. In the SOEP data, about 56% of works council members report that they are also union members.[12] Based on surveys after the 2022 works council elections, Kestermann et al. (2022) report that 41% of works council members are union members.

Information, Consultation, and Codetermination Rights Works councils have a range of competencies granted to them by law, which include information, consultation, and codetermination rights. These rights allow works councils to be actively involved in various aspects of a company's operations, such as working hours, remuneration, workplace safety, and social matters. Specifically, works councils have the right to access company information, such as financial statements and personnel planning, which enables them to engage in discussions with management.

One significant area of co-determination for works councils is personnel policy and employment, where the law vests works councils with rights that are particularly consequential for employment outcomes. Under § 99 BetrVG, works councils participate in decisions on individual hiring, transfers, and reclassifications. Under § 102 BetrVG, the works council must be consulted before every individual dismissal; a dismissal effected

[12]In comparison, the union share among all employees in the SOEP is about 14% in all establishments and 22% in those with a works council present. Numbers are based on all SOEP survey years from 2001 to 2019 in which both works council and union membership are surveyed; sample restrictions are similar to our main analysis. For 2019, the union share among works councilors is about 51%.

without this consultation is legally void, and the council can formally object on enumerated grounds—such as the availability of alternative employment or the violation of social criteria, which strengthens the affected worker's position in any subsequent labor-court proceeding under employment protection law (*Kündigungsschutzgesetz*). For "operational changes" (*Betriebsänderungen*), including plant closures, mass layoffs, relocations, and fundamental restructuring, the works council is entitled under §§ 111–112 BetrVG to negotiate both a reconciliation of interests (*Interessenausgleich*) over whether and how the change is implemented and a social plan (*Sozialplan*) defining layoff criteria and severance pay. Failure to agree on the Sozialplan sends the matter to a binding conciliation board (*Einigungsstelle*). These procedural rights raise the cost and delay associated with dismissals and operational changes, and give the works council a credible bargaining position that operates directly on the employment margin. Beyond legally granted rights, the importance of works councils for matters of employment is also highlighted by employees themselves: In a survey question we fielded in the Socio-Economic Panel, around 80% of employees report that works council representatives have the ability to influence firm decisions.

Additionally, works councils play a crucial role in maintaining workplace safety and health. They have the right to be involved in the design and implementation of occupational safety measures, the introduction of new technologies (especially monitoring technology), and the organization of working hours. Furthermore, they can initiate measures to improve working conditions and reduce hazards in the workplace. They are also tasked with monitoring compliance with labor law and provisions from applicable sectoral bargaining agreements, which could lead to direct wage effects. Additionally, works councils are involved in the classification of workers into positions whose pay, in turn, is determined by sectoral or firm-specific bargaining agreements. More directly, works councils can play a direct role in *whether* a collective bargaining agreement is adopted in the first place, since firms are not legally required to join an employer association and thereby become bound by an agreement (see Tognino, 2026, for an example of the dispute at Tesla over the accession to a collective bargaining agreement).

Works councils have the authority to negotiate and conclude establishment-level agreements (*Betriebsvereinbarungen*) on matters not covered by sectoral bargaining agreements. Although these agreements can only deviate from sectoral bargaining provisions if they benefit workers, a shift towards increased decentralization through opening and hardship clauses in sectoral bargaining agreements has given rise to establishment-level agreements that can also deviate from a sectoral bargaining agreement in terms of lower wage levels or longer hours (Rehder, 2003; Dustmann et al., 2014; Ellguth et al., 2014; Jäger et al., 2022a). Such agreements, often dubbed *pacts for employment*, have become common during economic crises as a means of preserving jobs.

In summary, German works councils hold a range of legally granted competencies that enable them to actively participate in establishment-level decision-making processes.

Elections Elections to the works council are regularly held every four years. All non-managerial employees of an establishment who have reached the age of 18 — changed to 16 in 2021 — are eligible to vote, including apprentices as well as employees without German or EU citizenship. To run for the council, there is additionally a six-month tenure requirement. Turnout in the last regularly-held works council elections was at 69% (Kestermann et al., 2022). When multiple platforms (e.g., unions or alternative lists) compete in the works council election, eligible workers vote for platforms (about 40% of works council elections, cf. Kestermann

et al., 2022). In smaller establishments with fewer than 100 employees or where there is no competition of different unions or lists, workers vote directly for individual candidates for the works council (as is the case for about 60% of works council elections, cf. Kestermann et al., 2022).[13]

We provide examples of election campaigns in Appendix Figure A1 for the works councils elections at a food delivery firm (Just Eat Takeaway with its German brand Lieferando). Appendix Figure A1 (a) shows a January 2022 protest at a Leipzig establishment of the food delivery firm that occurred after the dismissal of a rider. The banner features key demands related to dismissals and payment. Panels (b) and (c) illustrate campaign flyers of two competing unions, the Lieferando Workers Collective in Panel (b) and "Liefern am Limit" ("Delivering at the Limit") in Panel (c), which is part of a union belonging to the umbrella German Trade Union Confederation (DGB). Both campaigns stress their direct representation of riders and drivers ("If you don't vote, we risk handing over the workers council to superiors and managers." and "We consist of 100% drivers.", respectively). Both campaign posters feature English to communicate with a workforce with a high share of immigrants with limited German language skills. We additionally note the closely contested works council elections at Tesla's *Gigafactory* in Grünheide near Berlin, which illustrate how the partisan composition of a works council can shape establishment-level outcomes. In the 2024 election, a list affiliated with the metalworkers' union IG Metall became the largest single faction, winning 16 of 39 seats and around 40% of the vote, but fell short of a majority, leaving an incumbent, management-aligned bloc in control, which opposed accession to a bargaining agreement (Kramme, 2026; Tognino, 2026). Over the course of 2024 and 2025, Tesla reduced headcount at the plant by approximately 1,700 workers (about 14%); with the management-aligned majority on the council, no formal works-council opposition to the layoffs materialized over the objections of the IG Metall minority (Iwersen and Verfürden, 2026).

Depending on establishment size (starting in establishments with at least 200 employees), a number of elected works council members get released from their regular work duties to focus on their works council duties full-time. These professional worker representatives are elected by and from within the works council (§38 *BetrVG*). Elections follow the principles of proportional representation (*Verhältniswahl*) whenever there are multiple representatives to be released and may be organized via lists. The works council also elects from among its members a chair (*Vorsitzende*) who holds the *de jure* authority to set the agenda (*Tagesordnung*) and to chair council meetings (§ 29(2) *BetrVG*). In establishments large enough to have professional (full-time) worker representatives, the chair is in practice always one of those professional members, so agenda-setting authority is concentrated in the same group on which our administrative data analysis focuses.

Compensation Workers are generally not compensated for serving on the works council. Part-time works council members continue to receive their regular salary. Professional worker representatives continue to receive a salary. Until a recent ruling by the Federal Court of Justice (BGH, 10.01.2023 - 6 StR 133/22), it was common for professional worker representatives to be compensated in accordance with a hypothetical career that comparable workers would have achieved (leading to substantial compensation in some cases, e.g., of up to EUR 750,000 per year for a senior Volkswagen works council member). We test for the wage and

[13]Elections are establishment-wide and, since the 2001 reform of the Works Constitution Act, not separated by occupation. Prior to the reform, *Arbeiter* and *Angestellte* constituted separate electoral groups, and statutory minimum representation for the minority group applied. However, this imposed no equal representation by professional representatives: they were selected from among the elected works council members, and group representation had to be taken into account rather than imposed as strict proportionality. Given the small number of full-time positions and the two-stage selection process, substantial variation in the characteristics of full-time representatives could and did therefore arise even before 2001.

employment effects of becoming a professional worker representative and report results in Section 5.5.

Coverage and Works Council Size As of 2020, around 40% of employees in Germany in establishments with at least 5 workers (the size limit at which the right to form a works council kicks in) are covered by a works council (Ellguth and Kohaut, 2021). The share of workers covered by a works council has declined from close to 50% in the 1990s (Jäger et al., 2022a). Coverage is increasing in establishment size. Based on own calculations using the IAB establishment panel, about 15% of establishments with fewer than 200 employees had a works council in 2024, while coverage was about 78% for establishments with at least 200 employees. The size of the works council, i.e., the overall number of works councilors as well as the number of professional representatives is a step-function of establishment size with professional representatives making up about 10% to at most 32% of all representatives at establishments with at least 200 employees, with a larger share of professional representatives at larger establishments. See Appendix Table A2 for details.

Board Representation In larger German firms, workers have a right to be represented on their firm's supervisory board. In firms with 501 to 2000 workers, workers can elect one third of the directors on the supervisory board. In firms with more than 2000 workers, 50% of directors on the supervisory board are elected by workers, although the capital side retains the tie-breaking vote. The works council organizes the elections of the worker-elected directors and, frequently, the works council members themselves also serve as worker-elected directors (Jäger et al., 2020). Board representation may thus also be a channel through which works council members exert influence.

2.2 Data and Sample Selection

We primarily utilize two complementary datasets to provide a detailed and comprehensive overview of worker representation in Germany and its evolution over time. The first dataset we employ is the Integrated Employment Biographies (IEB), the universe of employer-employee data administered by the Institute for Employment Research (IAB). We use version V15.00.00-201912 of the IEB for our analysis. This dataset allows us to compile a sample of employed individuals and follow their employment trajectories for over 45 years from 1975 until 2019. It contains detailed information on employment status, earnings, occupation and basic demographics such as gender and nationality. Importantly, it allows us to study workforce composition within a given establishment. Although it lacks a direct identifier for works council membership, we can use detailed occupational and industry information to identify an important subset of works council members—those who are released from their regular work to concentrate fully on their representational duties (henceforth: professional works council members). These professional worker representatives are assigned a unique occupational code and can be distinguished from other representatives, like union leaders and employer representatives, using industry information. In 2007, professional worker representatives made up about 11% of all works council members in West Germany.[14] They devote their entire working time to representational duties and are more common in larger establishments. In consequence, compared to part-time council members these members are more specialized in their representational role and arguably play a more pivotal role in negotiations with the employer side. Crucially, the works council chair (*Vorsitzende*)—who under § 29(2) *BetrVG* holds the *de jure* authority to set the agenda of works council meetings and to lead negotiations—is in practice

[14]This number stems from own calculations based on the *Betriebsrätebefragung* of 2007, an establishment-level survey of works council members summarized in Schäfer (2008).

always a professional (full-time) representative. Our administrative-data focus on professional representatives therefore covers the very subset of works councilors that disproportionately shapes the council's bargaining agenda and is, as we explore in Appendix F, an important margin through which agenda-setting authority can translate into outcome differences across representative types.

Second, we draw on the German Socio-Economic Panel (SOEP), a large and representative panel survey of German households that has been fielded annually since 1984. The survey contains detailed questions about preferences, personality traits and employment trajectories. From 2001-2019, the survey included modules that inquire about individual works council membership and the existence of a works council at a respondent's current workplace in five distinct waves, namely in 2001, 2006, 2011, 2015, and 2019.[15] Our final sample (see below for details) includes 1,236 individuals who had been member of a works council at some point during this time period, and 13,351 represented employees. In addition, we can directly compare the works council information in the SOEP data and the IEB data for survey respondents for whom we could link responses to their administrative records in the IEB data.[16]

We also utilize annual reports of the Metal Union (IGM) for the years 1952-2018 which contain demographic information on workforce and works council members for establishments that are covered by IGM collective bargaining agreements. In addition, we draw on the LIAB, a linked employer-employee dataset, that links the establishment panel (Betriebspanel) survey with individual employment records from the IEB of employees in these establishments and allows us to cross-validate our measure of professional worker representatives with survey information on the existence of a works council, as well as to look at additional establishment level outcomes.

Blue-collar Definition We classify blue-collar occupations by first converting our 3-digit occupation code into 12 socio-economic occupational groups following Blossfeld (1985). From these, we define blue-collar occupations as simple manual occupations, simple service occupations, qualified manual occupations, technical occupations, and agricultural occupations. For example, the largest occupations in this group are motor vehicle drivers, electrical mechanics, cooks, cleaners and automotive mechanics. White-collar occupations in terms of the Blossfeld classification are engineers, qualified service occupations, professions and semi-professions, simple and qualified commercial and administrative occupations, as well as managerial occupations. For example, the largest occupations in this group are then office specialists, salespersons, nurses/midwives, data processing specialists and social/care workers.[17] As alternative definitions, we consider workers in routine occupations only or a more narrow blue-collar definition that excludes simple service occupations.

Identifying Works Council Members For the SOEP, we can identify works council membership based on direct questions about membership; for the IEB data we can identify it indirectly based on a combination of occupational and industry codes.

[15] In these years, individual works council membership is surveyed. The presence of a works council is assessed in all years except for 2015. For the year 2015, we use the closest available information from either 2011 or 2016 whenever individuals report to not have changed their place of employment in between. Membership is additionally surveyed in 2003 and 2007, however, works council existence is not.

[16] This linkage is part of a larger data linkage project that resulted in the SOEP-ADIAB data (see Jäger et al., 2024; Antoni et al., 2023).

[17] Appendix Table A1 provides a detailed breakdown of the 15 largest 3-digit occupations in terms of employment for blue- and white-collar workers according to this definition based on the SOEP sample.

The SOEP asked employed individuals in the years 2001, 2006, 2011, 2015 and 2019 whether they are works council members, along with questions on membership in other organizations. The question (translated from German) reads: "Are you a member of one of the following organizations or associations?" We code all individuals that tick the option "in a works council" as council members and those who do not as regular employees. For all years, the SOEP also asks whether a works council exists at the current place of work, which allows us to compare council members and regular employees, who are working in an establishment with a works council.

The IEB does not provide direct information on works council membership, but we propose a way to identify professional worker representatives using occupational and industry information. We use the three-digit occupational classification from 1988 of the Federal Employment Agency (KldB 1988) and — from 2011 onwards — the corresponding crosswalk to the occupational classification of 2010 (KldB 2010). To begin with, we identify all individuals with the code *Association Leader* and *Officials* ("Verbandsleiter, Funktionäre", occupational code = 763), which includes not only professional worker representatives on works councils but also other organization and association representatives, such as union leaders, employer representatives and sports association officials. To exclude non-works council representatives, we use detailed information on the establishment's industry. Typically, non-works council representatives are employed in specific industries (such as unions or employer associations), while works council members are employed across all industries. For example, we can expect employer representatives to be overwhelmingly employed by employer organizations, which in turn can be identified via their industry code. To further refine our measure, we exclude representatives from the two-digit industry "Interest groups as well as church and other religious associations" based on the time-consistent industry classification of 2008 (industry-code = 94). This exclusion helps us to identify professional council members in other industries accurately. The resulting group of workers in relevant occupations across other industries is our measure of professional council members in the IEB.

We classify worker representatives as blue-collar based on their occupational code in their first regular employment spell prior to becoming a professional representative.[18] As professional representatives are themselves identified by their occupational code, blue-collar status must be inferred from workers' occupational histories. The first regular employment spell is both a salient stage in workers' careers and an empirically stable measure of occupation status before becoming a professional representative. In the IAB sample, 89% of representatives whose first regular job was blue-collar are still in a blue-collar job immediately before becoming a full-time representative. Similarly, in our SOEP sample, more than 96% of works council members never switch between blue- and white-collar jobs over their observed employment histories.

We note that the blue- vs. white-collar status of representatives constitutes an inherently bundled treatment. This feature is shared by a broad class of studies that examine variation in representation or leadership along demographic or occupational dimensions. A close parallel is the literature on codetermination and worker representation on corporate boards (e.g., Jäger et al., 2020, 2022b), where worker directors differ from shareholder-appointed directors along many dimensions simultaneously. Similarly, the literature on gender board quotas (e.g., Bertrand et al., 2019; Maida and Weber, 2022, 2025) studies a treatment that is

[18] Under § 38 *BetrVG*, a professional representative is released from their regular work duties for the duration of their term, but the underlying employment contract—and hence its blue- or white-collar character—remains formally unchanged: a blue-collar worker who becomes a professional representative does not switch to a white-collar occupation by virtue of the role. In the administrative data, however, the recorded occupation does change upon release, as professional representatives are assigned the occupational code *Verbandsleiter, Funktionäre* (763) for the duration of their service.

also inherently bundled.[19] In these settings, as in ours, the object of interest is the reduced-form effect of changing the composition of representatives along a salient and policy-relevant dimension. Nevertheless, in Section 5.4, we present robustness results that account for correlated worker characteristics.

A Validation Exercise for Professional Worker Representatives in the Administrative Data We perform several validation exercises on our measure for professional worker representatives using the administrative IEB data. The administrative data originates from employer notifications used for social security purposes and is generally considered to be of high quality. However, the occupational code we use to identify professional worker representatives is not a necessary requirement for calculating social security contributions and may, therefore, be somewhat less reliable. At the same time, our sample consists of large establishments that typically have their own HR departments with high reporting standards.

To investigate the validity of our professional works council measure empirically, we conduct three distinct tests, all of which are displayed in Figure 1. The first test compares the expected variation in the number of professional worker representatives based on the number of employees with the actual variation in the data. By law, the number of councilors eligible for professional slots varies with the number of employees and has remained constant since 2001. Panel (a) displays the actual and expected sizes of works councils (counting only professional members) for the period of 2001-2018. The expected and actual numbers closely track each other throughout the establishment-size distribution.

Our second exercise tests a prediction resulting from the fact that works councils are elected nationwide in the same year, usually every fourth. As elections are competitive and individuals can decide to not run again (for example because of approaching retirement age), we should expect to see excess turnover of works council members in election years. Panel (b) shows the exit rates of individuals from the works council among those who remain at the establishment. The exit rates are detrended using a linear trend. We observe clear excess turnover in almost all of the election years, with exit rates being about 2 percentage points higher in these years, which is approximately 50% above the mean turnover in non-election years.

In a third test, we directly cross-validate our measure with establishment-level survey information on works council status. The survey measure is part of the IAB Establishment Panel and is linked to corresponding administrative employee records of the IEB in form of the LIAB dataset. We select all establishments that have valid survey information on council status, and further restrict to cases where council status is constant over the years. Panel (c) plots the share of establishments with at least one professional works councilor by establishment size separately for whether a works council exists or not according to the establishment panel. For those who do report having a works council, we see a strong increase in the share of establishments with at least one professional worker representative by establishment size, which reaches around 0.6 for establishments with 2000 and more employees. For establishments that report having no works council in contrast, that share stays flat and close to zero throughout the whole establishment size distribution, implying a small share of false positives. These findings imply a strong information content in the IEB-measure on council status. The small share of false positives is particularly reassuring as our empirical design only compares establishments where councils have been identified as members according to our IEB-measure. At the same

[19] More generally, a large literature examines how heterogeneity in board members' demographic and professional characteristics shapes firm outcomes, considering—beyond gender—attributes such as race, political affiliation, and educational background (see, e.g., Ferreira, 2010; Knyazeva et al., 2021, for overviews).

time these findings also point to an under-coverage of establishments with professional council members as indicated by the non-negligible (approximately 40%) share of false negatives. However, these false negatives do not bias our analysis, as we condition on establishments with a works council in the administrative data. Appendix Table A3 shows that these establishments are somewhat younger and pay slightly lower wages, but are broadly comparable to the establishments we identify in the IEB data.

In sum, all three validation exercises support the reliability of our measure for professional worker representatives in the administrative data.

Sample Selection From each of our datasets, we construct a sample that allows us to compare characteristics of works council members with characteristics of the employees they represent, i.e., regular employees working in an establishment with works council characteristics who are neither part of a works council nor in a management position.

For both the SOEP and IEB we select the sub-sample of individuals represented by the works council using the following criteria: age 20-64, regular social security employment (IEB) or self-reported employment (SOEP), and a works council in the current establishment. Further, we exclude individuals in management positions[20] and those we observe as a works council member at least once. For the SOEP, we additionally exclude civil servants and the self-employed, two groups not observed in the IEB and with different or no employee representation. The sub-sample of works council members is based on the identification procedures above, where we take all individuals classified as a works council member without imposing any further sample restrictions.

For the SOEP, this leaves a sample of 1,616 works council member individual-year observations (1,236 individuals) and 21,426 employee individual-year observations (13,351 individuals) over five waves. Note, however, that not all outcomes in the SOEP are surveyed in all waves. For an overview of outcome variables and details on the timing of different SOEP questions, see Appendix Section C.

In a next step, we construct establishment-level characteristics of works council members and regular employees which we can later use to characterize worker representation at that level. In the IEB data, we collapse our individual $\times$ year data to the establishment $\times$ year level. For the SOEP data we skip this step, as we cannot observe multiple individuals for a given establishment.

3 Descriptive Representation of Blue-Collar Workers

This section characterizes the workers who serve on works councils and the workers they represent. Motivated by the documented underrepresentation of blue-collar workers in many leadership positions (Carnes, 2013; Ellersgaard et al., 2013), we first examine trends in the descriptive representation of blue-collar workers on works councils. We document a close-to-proportional representation on average, accompanied by substantial heterogeneity across establishments. We then turn to the preference and selection margins: drawing on representative survey data, we show that blue- and white-collar workers differ markedly in their concerns

[20] We identify managers using the following occupation code: KldB 1988 = 751 *Entrepreneurs, Managing Directors and Division Managers* ("Unternehmer, Geschäftsführer, Geschäftsbereichsleiter"). As we discussed in Section 2.1, managers are not represented by the works council and are neither eligible to vote nor to stand in works council elections.

about job security, and we characterize how workers who become representatives differ from their coworkers in terms of earnings and other individual characteristics.

3.1 Descriptive Representation

Measuring Descriptive Representation We measure descriptive representation as the percentage point difference between the composition of the works council and that of the corresponding workforce. We construct this measure in a given year in two steps: We first compute the establishment level difference in the characteristics of an average works council member and an average employee. We then take the average over all establishments where we weight by establishment size to reflect representation for an average employee, instead of an average establishment. For further details see Appendix Section B.

Trends in Blue-Collar Representation Panel (a) of Figure 2 reports trends in blue-collar representation of professional worker representatives. We see a moderate gap with blue-collar workers slightly underrepresented (by about 10ppt) in 1975 with a secular convergence and the gap closing over time. We complement this series with a long-run time series on blue-collar representation from the Metal Union (IGM) that encompasses data since 1952 on establishments covered by IGM. Here, blue-collar status is not constructed from occupation codes, but directly reported by the establishments. The IGM series shows a stable, slightly increasing representation of blue-collar workers with a gap close to zero throughout the observation period. We find very similar results when we focus on workers in occupations characterized by predominantly routine tasks or when excluding simple services from our blue-collar definition (see Appendix Figure A2).

For comparison, we also examine the representation of blue-collar workers among managers for the same establishments and using the same data and representation measure as for works councils. We define managers based on the three digit occupational classification KldB 1988 and classify those with code 751 as managers for which we construct the representation gap analogously to our representation measure among council members. Panel (a) of Figure 2 shows the resulting time series. In sharp contrast to the close-to-proportional representation of blue-collar workers in the works council, blue-collar workers are severely under-represented in management positions, with an average representation gap between -60 and -30ppt throughout the observation period.

We also investigate whether the observed trends in representation gaps reflect trends that occur within establishments or stem from changes in the composition of establishments with a works council. First, we obtain the original time series discussed above by regressing representation gaps on the full set of year dummies. To construct a series net of compositional changes, that is only looking at changes within establishments, we then additionally include establishment fixed effects in the regression. Appendix Figure A3 plots the resulting year dummies and corresponding 95% confidence intervals from both regressions relative to the raw mean of the first observation period. For most outcomes both time series track each other closely.

While there are no dramatic changes in representation over time, with only a mild gap slowly closing, there has been a secular decline of blue-collar workers as a share of the overall workforce. Appendix Figure A2 provides an example of this decline, showing that the blue-collar worker share declined from almost 60% to slightly above 40% over the observation period for both representatives and employees.

Heterogeneity in Representation The close-to-proportional representation in the aggregate masks considerable heterogeneity in representation at disaggregated levels. Panel (b) of Figure 2 shows the distribution of the establishment-level representation gap, which we restrict to the post 2011 period due to the occupational reclassification. The aggregate mean representation gap in this period is close to zero with -3.8ppt. Yet, with a standard deviation of 32ppt this gap exhibits substantial variation, with about a third of employees working in establishments displaying over or under-representation exceeding 25ppt.

We also see substantial heterogeneity in representation between East and West Germany. When we examine trends in representation, our baseline sample is restricted to West Germany, for which we have continuous information since 1975. Appendix Figure A4 shows in addition the trends for East Germany for which we have data since 1992 (post-reunification). Compared to West Germany, East Germany starts out with a larger blue-collar representation gap of around -22ppt in 1993 but exhibits a stronger convergence over time similarly leading to a convergence in representation gaps by 2019 (although East Germany continues to exhibit somewhat larger gaps).

3.2 Preference Heterogeneity between Blue- and White-Collar Workers

Beyond the heterogeneity in representation documented above, blue- and white-collar workers also differ substantially in their preferences and concerns—a dimension that previous research on unions has highlighted as important for understanding how worker organizations affect wages, working conditions, and the social safety net (Korpi, 2006; Becher and Pontusson, 2011; Ibsen and Thelen, 2017; Cronert and Forsén, 2021). To explore preference heterogeneity between blue- and white-collar workers—as well as between blue- and white-collar works council members—we draw on data from the SOEP.

In Figure 3 and Table 1, we present the mean of preferences and characteristics separately for blue- and white-collar workers (see Columns (1) and (2)) along with the corresponding differences between the two groups (Column (3)).[21] Panel (a) of Figure 3 shows differences in demographic background and unemployment experience. Notably, blue-collar workers have a 10.2ppt higher likelihood of having experienced unemployment in the past.[22] Panel (b) shows that blue-collar workers are also substantially (12.2ppt) more worried about their economic situation in general and their job security (14.7ppt) in particular. They are more worried about the devaluation of their skills (9.4ppt) and are slightly (0.038 of a standard deviation) less satisfied with their job. These differences manifest also in the subjective probability of various job changes, as shown in Panel (c). Blue-collar workers report an 11% (1.9ppt) higher probability of losing their job within the next two years, are more pessimistic about getting promoted (3.7ppt), and view it as substantially less likely to receive further training (19.8ppt). Despite these assessments, blue-collar workers view it as less likely that they would quit voluntarily over the next two years. Turning to job-related burdens in Panel (d), we see that blue-collar workers are more likely to describe their current working conditions as characterized by "job at risk" (6ppt), "wage not fair given effort" (3ppt), "bad promotion prospects" (4.4ppt) and "insufficient recognition from superiors" (4ppt). Lastly, Panel (e) shows that blue- and white-collar employees also substantially differ in their political attitudes: First of all, blue-collar employees generally seem less interested in politics, with 14.7ppt fewer respondents reporting a high or very high interest in politics. While they are on average

[21] We report conventional standard errors but denote significance using Romano-Wolf p-values.

[22] Blue-collar workers are less likely to be female, hold a university degree, or have a father with a high-school degree.

more right-leaning (about 0.2 SD), the picture is more nuanced: On matters of redistribution, blue-collar workers hold more left-leaning views when it comes to high-income taxation and welfare, yet they show markedly stronger right-wing views on cultural issues like gender and migration. This is also consistent with a strong attachment to the traditional center-left, labor party SPD (42.8% vs. 29.7%), while the Greens are remarkably less popular among blue-collar employees (7.8% vs. 23%). Notable for our research question, and corroborating the evidence mentioned in the introduction, blue-collar workers also feel less included politically: Combining various questions on the perceived influence on different levels of political decision making, blue-collar workers report 0.2 standard deviations lower levels of influence. They are also significantly more likely to agree with statements such as "People like me do not have an influence on what the government does". For details, see Appendix Table A4.

Most, though not all, of the differences in job-related preferences and worries between blue- and white-collar workers carry over to works council members (despite the strong job protection they enjoy while serving on the works council). Columns (4) – (6) of Table 1 repeat the previous analysis for individuals currently serving on the works council. In particular, even though perceived job security is notably higher for all groups, blue-collar workers still worry significantly more about their own economic situation and job security than their white-collar counterparts.

Taken together, blue-collar workers exhibit notably different preferences and worries related to characteristics of a job. In particular, blue-collar workers report higher concerns about job security and losing a job than white-collar workers. Given that these differences largely persist while serving as council members, it seems plausible that blue-collar works council members bargain more strongly for job-preserving firm policies (for example by avoiding mass-layoffs) (Pitkin, 1967).[23]

3.3 Selection of Blue- vs. White-Collar Worker Representatives

We next characterize how workers who become representatives differ from the broader workforce. If more able workers are better at bargaining outcomes (Caldwell et al., 2026), differential selection on ability between blue- and white-collar representatives could be an important dimension for understanding any differential effects of blue-collar representation.

To study selection of worker representatives we consider both wages and AKM person effects as a proxy for labor market ability. One concern with the naive comparison of observed wages between works council members and employees is that they confound selection into the works council with wage effects of council membership. Thus, we measure selection by the last pre-election wage or AKM effect of each works council member relative to median employee not in the works council. Figure 4 shows the resulting weighted average over all establishments in a given year, where works council members in a larger establishment receive a larger weight since they represent more employees on average. [24]

[23] Another reason is suggested by a recent literature on the heterogeneous costs of job displacement; see, for example, Illing et al. (2024), Athey et al. (2026), and Gulyas and Pytka (Forthcoming). Using Austrian social security data, Gulyas and Pytka (Forthcoming) find that blue-collar status is a strong predictor of severe long-term wage losses and is therefore useful for constructing policy targeting rules (cf. their Section VI and Figure 7(b)). Similarly, Athey et al. (2026), while not explicitly considering a blue-collar/white-collar distinction, find that routine jobs and manufacturing industries are among the strongest predictors of earnings losses in the Swedish labor market, both of which are correlated with blue-collar status.

[24] To control for observable differences between works council members and employees we consider residuals from a regression on tenure, occupational position, education in years, gender, and year. We restrict the sample to full-time employees, since hours worked are unobserved, and correct for a structural break in 2011 due to occupation classification by estimating the

Studying the time trends of works council members' ability and labor market performance in terms of the measures displayed in Figure 4 (a), we find that professional works council members earn on average more than 5% higher—pre-election—wages throughout the observation period compared to the median employee at their establishment. The findings for AKM person fixed effects are very similar, with slightly larger differences to the median worker and again flat time trends. In contrast, all council members (professional and part-time) earn very similar wages compared to the median worker at their establishment, without any notable trends over time. This also holds for the difference in the pre-election year individual AKM fixed effect, indicating that professional works councilors are positively selected among all council members.

We examine heterogeneity between blue- and white-collar workers in terms of residual wages in Panel (b) and in terms of individual AKM fixed effects in Panel (c) of Figure 4. While the selection in terms of both measures is similar between blue- and white-collar workers on average, the trends diverge somewhat over time. While blue-collar workers start slightly less positively selected in the early 1980s, this trend has partly reversed over time, with blue-collar workers slightly more positively selected since the 2010s.

Appendix Figure A5 additionally considers differences in various measures of personality measured by the Big Five personality traits, as well as cognitive and non-cognitive skills between blue- and white-collar workers both in the workforce and on the works council. Note that the SOEP combines information for both part-time and professional works council members. Consistent with evidence from the IEB, we find no clear evidence for a differentially more positive selection of blue-collar workers. Rather, differences in the works council composition largely reflect differences in the workforce. Blue-collar workers appear less open and extraverted, show lower levels of internal locus of control and pro-sociality, and score lower on short-scale symbol and word tests that proxy for cognitive ability. However, they appear notably more conscientious and less agreeable, two character traits that might be linked to stronger bargaining behavior.

The preceding analysis establishes two key facts: blue- and white-collar workers — and their elected representatives — differ substantially in their preferences for job security, yet they are similarly selected in terms of ability. We next develop a theoretical framework that formalizes these preference differences as heterogeneity in employment bargaining power and derives testable predictions for worker and representative outcomes.

4 Wage and Employment Bargaining with Heterogeneous Worker Representatives

4.1 Overview

We build a simple four-stage model of wage and employment bargaining between a firm and a professional worker representative. The model allows us to consider worker representatives that are heterogeneous in their bargaining power. We extend and augment Manning's 1987 two-stage wage–employment bargaining framework, which nests several benchmark union bargaining models (e.g., efficient bargaining, monopoly union, or right-to-manage models), to include an initial stage in which a representative is selected and a stage in which the firm can "buy down" the representative's bargaining power.[25]

discontinuity and adding it to the past time series.

[25]There are several high-profile cases in which works council members received exceptionally high remuneration or other material benefits, consistent with firms attempting to secure cooperative behavior or reduce representatives' bargaining power

Our key operationalization is that we assume that blue-collar worker representatives have larger bargaining power over employment, motivated by our observation that job loss is a greater concern for blue-collar workers and blue-collar representatives. Modeling blue-collar workers as exerting greater bargaining power over employment is consistent with bargaining traditions in which intensity of preference along a dimension translates into effective bargaining weight on that dimension, for example, in strategic delegation (e.g., Schelling, 1960; Segendorff, 1998; Bester and Sakovics, 2001), citizen-candidate selection (e.g., Besley and Coate, 1997), and reputational bargaining models (e.g., Abreu and Gul, 2000; Peski, 2021). As alternative thought experiments, we also explore comparative statics when the outside option becomes worse for workers and, motivated by the works council's formal authority to set the agenda and lead negotiations, a flip in the order of bargaining over employment and wages (Appendix F).

The model can rationalize four key empirical findings by positing that blue-collar representatives have greater bargaining power over employment. First, electing a blue-collar representative raises job security for incumbent workers (higher employment corresponding to lower separations). Second, electing a blue-collar representative has no effect on the wages of the represented workers (although ambiguous wage effects are possible under more general functional forms than the one we choose in our application). Third, becoming a professional representative raises the representative's own earnings. Fourth, such earnings increases are larger for blue- compared to white-collar worker representatives.

4.2 Environment and Timing

A continuum of identical workers is employed by a risk-neutral firm. Each worker has outside option $b > 0$. The firm has a strictly concave revenue function $f(L)$ in employment L, and we follow Manning (1987) in specializing to:

$$f(L) = L^{\beta}, \qquad 0 < \beta < 1.$$

Workers are represented by a single professional representative (e.g., a works council chair) who bargains with the firm. Following Manning's Nash bargaining framework, the representative has bargaining power $p \in (0, 1)$ over wages and $q \in (0, 1)$ over employment. The representative is utilitarian over risk-neutral members and has utility:

$$U(w, L) = L \cdot (w - b),$$

where w denotes the common wage for workers and b their outside option. Firm profits are:

$$\Pi(w, L) = f(L) - wL.$$

We distinguish between two types of representatives:

$$t \in \{blue, white\},$$

where *blue* denotes a blue-collar representative and *white* denotes a white-collar representative. We do

(see Section 2.1). While such cases provide qualitative evidence, representative evidence is more mixed: Brébion (2022) documents substantial heterogeneity in works councilors' wage effects across sectors and discusses firm strategies to influence worker representatives. See Section 5.5 for our event-study evidence on works council members' salaries.

not model the bargaining process within the works council or how the works council may aggregate worker preferences. This abstraction is grounded in the literature on limited political commitment, which emphasizes that elected representatives' own characteristics may directly shape policy outcomes (see, e.g., Besley and Coate (1997)).

Types differ only in their initial bargaining power over employment, $q_0(t)$, with

$$0 < q_0(white) < q_0(blue) < 1.$$

For simplicity, we assume that bargaining power over wages p does not depend on type. This assumption also partially reflects the institutional reality of German works councils which have substantial leeway in bargaining over employment and more limited ways to negotiate over wages (see Section 2.1).

The timing of the game is as follows:

Stage 0 (selection). A representative of type $t \in \{blue, white\}$ gets selected by nature, pinning down the initial employment bargaining power $q_0(t)$.

Stage 1 (bribing). The firm unilaterally chooses a non-negative transfer $x \geq 0$ to the representative.[26] This transfer reduces the representative's bargaining power over employment according to:

$$q = g(q_0, x),$$

where g is strictly increasing in q_0 and strictly decreasing in x. We interpret x as a monetary or career benefit accruing to the representative. The representative's income will then be:

$$y_R = w + x,$$

while all other workers earn w.

Stage 2 (wage bargaining). Given p and q, the firm and the representative Nash-bargain over the wage w.

Stage 3 (employment bargaining). Given the agreed wage w, the firm and the representative Nash-bargain over employment L with bargaining power q.

We abstract from participation constraints in Stage 1 and assume that the firm can freely choose x; we return to this assumption in the discussion below.

[26] Brébion (2022) also investigates the case of negative transfers as a means to deter worker representatives from running. Given the close to proportional representation of blue-collar workers and the persistence of preference heterogeneity between blue- and white-collar workers among elected representatives we abstain from modeling the selection stage, and hence non-negative transfers, explicitly.

4.3 Benchmark: Two-Stage Wage and Employment Bargaining

We solve the model by backward induction and focus on Stages 2 and 3 first, holding p and q fixed. Following Manning (1987), employment is chosen by Nash bargaining over (U, Π), taking w as given. Employment L solves:

$$\max_{L} \; q \log[L \cdot (w - b)] + (1 - q) \log[f(L) - wL].$$

The associated first-order condition implicitly defines an employment rule $L(w, q)$.

In Stage 2, w is chosen by Nash bargaining, anticipating and taking into account $L(w, q)$ from Stage 3:

$$\max_{w} \; p \log[L(w, q)(w - b)] + (1 - p) \log[f(L(w, q)) - wL(w, q)].$$

Manning (1987) solves this problem explicitly for $f(L) = L^{\beta}$. In this case, the unique equilibrium outcome (w^*, L^*) of the sequential bargaining game can be expressed in closed form as functions of (p, q, β, b):

$$w^*(p) = \frac{b}{\beta}\big[\beta + (1 - \beta)p\big], \tag{1}$$

$$L^*(p, q) = \left[\frac{\beta}{b} \cdot \frac{\beta + (1 - \beta)q}{\beta + (1 - \beta)p}\right]^{\frac{1}{1-\beta}}. \tag{2}$$

Two features are important for our purposes.

Lemma 1 (Comparative statics in the two-stage game)**.** *In the two-stage Nash bargaining equilibrium with $f(L) = L^{\beta}$:*

1. *Employment is increasing in employment bargaining power q and decreasing in wage bargaining power p:*
$$\frac{\partial L^*}{\partial q} > 0, \qquad \frac{\partial L^*}{\partial p} < 0.$$
2. *The equilibrium wage w^* depends only on p and is independent of q:*
$$\frac{\partial w^*}{\partial q} = 0, \qquad \frac{\partial w^*}{\partial p} > 0.$$

The first part states that giving the representative more power over employment raises employment, while greater wage bargaining power reduces employment. The second part implies that, for a given p, any change in q affects employment but leaves the wage of the represented workers unchanged. These properties will be central when we map the theory to the empirical findings.

4.4 Stage 1: Transfers to Worker Representatives

We now consider and solve Stage 1, in which the firm can reduce q by offering a transfer x to the representative. Given a representative of type t with initial bargaining power $q_0(t)$, the firm chooses x to maximize profits net of the transfer, taking as given the two-stage equilibrium characterized in Lemma 1:

$$\max_{x \geq 0} \; \Pi^0(x; t) = f\big(L^*(p, q(x, t))\big) - w^*(p)\, L^*(p, q(x, t)) - x,$$

where

$$q(x,t) = g\big(q_0(t), x\big), \quad g_{q_0} > 0, \quad g_x < 0.$$

The firm benefits from reducing q because, by Lemma 1, lower q implies lower equilibrium employment L^* and thus lower total wage costs w^*L^*. The equilibrium wage $w^*(p)$ itself is not affected by q.

The properties of the optimal transfer x^* depend on the functional form of the bribing technology g. To link the theory to our empirical findings, we make the following parametric assumption on the bribing technology.

Assumption 1 (Partial offset)**.** The bribing technology is multiplicative, i.e., $g(q_0, x) = \phi(x)q_0$ where $\phi : [0,\infty) \to [0,1]$ satisfies $\phi(0) = 1$, $\phi'(x) < 0$, and $\phi''(x) > 0$, and satisfies log-convexity: $\phi''(x)\phi(x) > \phi'(x)^2$ for all $x \geq 0$.

We then have the following comparative statics:

Lemma 2 (Transfer comparative statics)**.** *Under Assumption 1*

(i) The optimal transfer is increasing in initial employment bargaining power: $\partial x^*/\partial q_0 > 0$.

(ii) The optimal transfer is decreasing in the equilibrium wage: $\partial x^*/\partial w^* < 0$.

(iii) $q_0(blue) > q_0(white) \quad \Rightarrow \quad q^*(blue) > q^*(white)$.

That is, the firm does not fully undo the initial difference in employment bargaining power across types. This partial offset is essential for generating persistent differences in employment outcomes. See Appendix Sections E.3 and E.4 for derivations. Note that Lemma 2(i) and (ii) hold generally for multiplicative bribing technologies, while (iii) requires log-convexity.[27]

4.5 Implications for Worker and Representative Outcomes

We now summarize the implications of the model for worker outcomes and for the representative's own earnings.

Worker wages. By Lemma 1, the equilibrium wage of the represented workers is

$$w^*(p) = \frac{b}{\beta}\big[\beta + (1-\beta)p\big],$$

which does not depend on q. Since we assume p is the same for blue- and white-collar representatives, the model predicts:

$$w^*(blue) = w^*(white).$$

Electing a blue-collar rather than a white-collar representative thus leaves the average wage of represented workers unchanged. This matches our empirical finding in Section 5 that there is no effect of electing a blue-collar representative on wages. However, we note that this independence result is a consequence of the specific functional form we have chosen. With more general functional forms, the comparative static of wages with respect to q is ambiguous (Manning, 1987).

[27] In Appendix Section E.2, we also analyze the special case of a linear bribing technology that yields a different prediction: (i) the optimal transfer x^* is increasing in q_0, and (ii) in the interior case, the firm fully offsets differences in q_0, yielding the same q^* regardless of representative type.

Worker employment and separations. By Lemma 1, equilibrium employment is increasing in the representative's bargaining power over employment:

$$L^*(p, q^*(t)) = \left[\frac{\beta}{b} \cdot \frac{\beta + (1-\beta)q^*(t)}{\beta + (1-\beta)p}\right]^{\frac{1}{1-\beta}}, \qquad \frac{\partial L^*}{\partial q} > 0.$$

Further, by Lemma 2(iii), i.e., $q^*(blue) > q^*(white)$, this prediction is preserved under bribing:

$$L^*(p, q^*(blue)) > L^*(p, q^*(white)).$$

Thus, electing a blue-collar representative leads to higher equilibrium employment and therefore lower separations, corresponding to our empirical results in Section 5.

Representative wage gains. The income of the representative of type t is

$$y_R(t) = w^*(p) + x^*(q_0(t), w^*(p)).$$

By Lemma 2(i), the optimal transfer is strictly positive and increasing in initial employment bargaining power q_0. Hence

$$y_R(blue) - w^*(p) > y_R(white) - w^*(p) > 0.$$

Becoming a professional representative generates income gains, and these gains are larger for blue-collar representatives. Notably, this result holds regardless of whether the partial offset condition (Assumption 1) is satisfied: even if the firm fully offsets differences in q_0, blue-collar representatives still receive larger transfers precisely because more resources are required to buy down their higher initial bargaining power.

Discussion. The model focuses on *descriptive* differences between blue- and white-collar representatives, operationalized as differences in their initial bargaining power over employment $q_0(t)$. Under a log-convex, multiplicative bribing technology (Assumption 1), variation in $q_0(t)$ translates into differences in job security but not in wages for workers. At the same time, the firm optimally uses transfers to attenuate differences in q_0, which explains why wage gains for representatives themselves can be substantial even when the effects on the wages of regular workers are muted or non-existent. We note that the prediction on representative wage gains is more robust than the employment prediction: it holds under both the linear and multiplicative bribing technologies, since $\partial x^*/\partial q_0 > 0$ in both cases.

5 Effects of Blue-Collar Representation

The evidence in Section 3 documents large heterogeneity in the representation of blue-collar workers and substantial preference differences between blue- and white-collar workers. The bargaining model in Section 4 provides a framework for understanding how these differences in descriptive representation can translate into differences in substantive representation. We now examine the effects of blue-collar representation empirically.

5.1 Identifying the Effects of Blue-Collar Representation: Two Complementary Identification Strategies

We employ two complementary identification strategies to estimate the effect of blue-collar representation on worker outcomes: An event-study specification that leverages the sudden change in works council composition in election years relative to comparable control firms without such an increase, and an IV specification that leverages retirement-induced changes in the works council composition. We measure blue-collar status as working in a blue-collar occupation at labor market entry. We implement both specifications using the IEB data. This allows us to examine variation in the composition of professional worker representatives at the establishment level and to examine worker outcomes at the *establishment* × *year (*× *blue-collar)* level, using the same sampling choices as described in Section 2. We pool outcomes for both blue- and white-collar workers in our baseline specification, and investigate group differences in a second step. Going forward, we refer to the professional members of the works council as the works council.

Event-Study Specification We employ an event-study design that studies election-induced changes in the works council composition. We concentrate on the first large increase ($\geq$ 33ppt) in the establishment level blue-collar share in the works council that occurs in an election year.

To construct a comparable control group, we match each treated establishment to a never-treated control establishment within the pre-treatment (i.e., pre-election) year.[28] The matching allows us to compare similar treated and control establishments, with plausibly similar trends, as is common practice in the job-loss literature (Schmieder et al., 2023; Illing et al., 2024). Our setup also avoids the concern of multiple periods or variation in treatment timing raised in the recent event-study literature (Roth et al., 2023). We use 1:1 nearest-neighbor matching with the following matching variables: the blue-collar group share in the workforce and among the works council, the log number of employees, as well as 10 establishment size groups, 16 state dummies and an indicator for manufacturing industries. Columns (2) and (3) of Appendix Table A5 compare the pre-event characteristics in the treatment group with the matched control group. Establishments are comparable along many observed dimensions, including some not used for matching, like mean earnings.

We estimate the following model for outcomes of group $g \in \{blue, white\}$ at establishment e in year t:

$$\begin{aligned} Y_{get} = \alpha_e + \beta_t + \sum_{\substack{h=-5,\\ h\neq -1}}^{5} \tau_h I\{t = c_e + h\} \times Treat_e + \sum_{\substack{h=-5,\\ h\neq -1}}^{5} \delta_h I\{t = c_e + h\} \\ + \sum_{\substack{h=-5,\\ h\neq -1}}^{5} \theta_h I\{t = c_e + h\} \times I\{g = blue\} + \gamma I\{g = blue\} + \varepsilon_{get}. \end{aligned} \tag{3}$$

Treatment status is defined at the establishment level and denoted $Treat_e \in \{0, 1\}$. We include five leads and lags, with c_e denoting the establishment-specific treatment year defined by the treated establishment for each match-pair. To make estimates representative for the represented workforce, we weight each observation

[28] Treated firms differ in a number of expected ways from the overall sample of firms as documented in Figure A6. For example, they come more often from blue-collar-intensive industries. Importantly, results do not suggest that treatment is driven by firms in economic distress or undergoing unusual structural change.

with the number of regular employees, capped at the 95th percentile of the establishment-size distribution to reduce the influence of outliers. While the baseline specification shown here pools effects for blue- and white-collar workers, we can extend the analysis to estimate separate treatment effects by group.

Besides the establishment fixed effects α_e, we include year-fixed effects β_t and relative time fixed effects δ_h, which we allow to vary by group in the form of θ_h. In addition, we include group fixed effects γ. Coefficient τ_h shows the treatment effect in period h relative to the pre-event reference period $h = -1$. We complement our estimates corresponding to equation (3) with a pooled version where we replace the post-period coefficients with one post-treatment indicator. To examine potential pre-trend violations, we test for joint significance of the pre-event τ_h and report the resulting p-values. Standard errors in all specifications are clustered at the match-pair level (Abadie and Spiess, 2022).

Panel (a) of Figure 5 shows the event-induced change in the blue-collar share of the works council: In the event year, the blue-collar share increases by 44ppt—from about 13% to 57%—compared to the pre-event year. The change is sudden, with flat pre-trends that are indistinguishable from zero. In the post-event years, the share remains constant and even increases slightly in the 5th year after the event (which corresponds to the first year after the next election) to exceed 50ppt.

Retirement IV A potential worry about the event-study specification is that workers endogenously elect blue-collar representatives in response to, or in anticipation of, factors affecting the outcomes we study.For example, workers might elect representatives that signal a stronger emphasis on employment protection if they anticipate layoffs in the near future. To address this concern, we employ an IV strategy that isolates variation driven by incumbent worker representatives reaching retirement age. Our IV strategy uses the fact that, in Germany, a large share of individuals retire in their early 60s at salient, statutory retirement ages. Appendix Figure A7 shows large excess in employment exits when works councilors turn 60, 63 or 65 years, which is consistent with the findings of Seibold (2021) for the overall workforce. This creates turnover in works council members in election years, and hence changes the works council composition. If a blue-collar member retires, it is likely that at least in some cases the replacement member is white-collar, while the opposite is true if a white-collar worker were to exit.

Equation (4) formalizes this intuition of isolating retirement-induced variation by constructing an expected blue-collar share in the works council at time t and establishment e, which we use as our instrument:

$$E[swc_{e,t}^{blue}] = \underbrace{\frac{Nwc_{e,t-1}^{blue}}{Nwc_{e,t-1}}}_{\text{Lagged Share}} + \underbrace{\frac{Nwc_{e,t-1,retire}^{white} \times s_{e,t-1}^{blue}}{Nwc_{e,t-1}}}_{\Delta\text{From White-collar Retirements}} - \underbrace{\frac{Nwc_{e,t-1,retire}^{blue} \times (1 - s_{e,t-1}^{blue})}{Nwc_{e,t-1}}}_{\Delta\text{From Blue-collar Retirements}}. \tag{4}$$

Here, $swc_{e,t}^{blue}$ denotes the blue-collar share in the works council in year t and establishment e. We denote the number of works council members in a *group* as $Nwc_{e,t}^{group}$. The subscript *retire* refers to retirement exits from $t-1$ to t. $s_{e,t}^{group}$ denotes the share of employees in a *group* among *all* employees. First, note that if there are no retirement exits (so $Nwc_{e,t-1,retire}^{white} = Nwc_{e,t-1,retire}^{blue} = 0$), the predicted share simply equals the lagged share. When a white-collar councilor retires, we expect the blue-collar share to increase proportionally to the share of blue-collar employees in the establishment if councilors are replaced at random (second term). Similarly, a retirement-induced blue-collar exit from the works council decreases the expected

share (the third term).

The retirement-induced variation employed by this instrument is arguably exogenous to unobserved workplace conditions that might jointly affect membership composition and outcomes. We further add establishment and calendar year fixed effects to our IV specification, which purges out constant establishment and year factors such as the leniency of an establishment to have a higher blue-collar share at the establishment. In all specifications, we cluster standard errors at the establishment level.

The first stage regresses the actual blue-collar share in the works council in year t on the predicted share displayed in equation (4). Instead of using the yearly share, we use an imputed version, where we count every individual as a member for the full election period. Thus, we effectively use only variation between election periods. Appendix Figure A7b visualizes the first stage as a binned scatter plot and shows how well the expected blue-collar share of works council members predicts the actual share after controlling for establishment and year effects. There is a strong linear relationship: The estimated coefficient is 0.805 (SE = 0.0058) implying a t-stat greater than 130, alleviating potential weak-IV concerns.[29]

We estimate the following second stage specification:

$$Y_{eg,t+4} = \alpha + \beta \widehat{swc}_{e,t}^{blue} + \theta_{eg} + \eta_{tg} + \varepsilon_{egt}. \tag{5}$$

We measure outcome Y in $t+4$ if not noted otherwise, due to the 4-year nature of election years. We estimate our second stage at the *establishment* $\times$ *year* $\times$ *group* level, where we control for *establishment* $\times$ *group* (θ_{eg}) and *group* $\times$ *year* fixed effects (η_{tg}). Here, β corresponds to the treatment effect, pooled for blue- and white-collar workers.

We employ two additional modifications of the IV specification. First, we measure outcomes relative to the pre-event period, i.e., we modify (5) to use $\Delta Y_{eg,t} = Y_{eg,t+4} - Y_{eg,t-3}$ as the outcome instead. This difference-in-difference type specification allows us to examine whether establishments with retirement exits exhibit different trends. Second, instead of using *observed* retirement exits at age 63 we construct a version of the predicted blue-collar share that uses *intended* retirement exits, meaning it is purely based on variation coming from an increased likelihood of retirement when crossing the age 63 threshold. This intent-to-treat specification addresses potential concerns of endogenous retirement exits as a response to (anticipated) changes at the establishment.

In addition, we implement a retirement-induced specification of the event study. In particular, we restrict the event-study sample to the subset of events for which the retirement IV predicts an increase in the blue-collar works council share of at least 20ppt.

Effects for Blue- vs. White-Collar Workers While we mainly consider specifications pooling treatment effects for blue- and white-collar employees, we are also interested in the separate effect of blue-collar representation in the works council on blue- and white-collar workers. Equation (6) shows a modified second stage IV specification. Here, β^{blue} captures the effect for blue-collar workers, whereas $-\delta$ captures the effect of blue- relative to white-collar workers.

[29] A slope less than one implies that the replacement of an exiting council member is more likely to be of the same group than would be predicted by chance, suggesting some inertia that favors the existing group.

$$Y_{eg,t+4} = \alpha + \beta^{blue}\widehat{swc}^{blue}_{e,t} + \delta\widehat{swc}^{blue}_{e,t} \times I(g = white) + \theta_{eg} + \eta_{tg} + \varepsilon_{egt} \quad (6)$$

For the event-study specifications (both baseline and retirement-induced), we estimate separate regressions for blue- and white-collar workers, as well as triple-difference specifications, allowing us to examine the relative effect of blue- to white-collar worker representation.

5.2 Main Results

We now turn to discussing our main findings of how different outcomes are affected by group representation. We jointly discuss the results for the event-study- and IV specification.

Separations We report effects on separation outcomes in Figure 5 and column (1) of Table 2. Panel (b) of Figure 5 shows event-study results for the share of employees separating involuntarily from the current establishment in a given year, where we use separations involving at least a gap of three months of non-employment before the next employment spell as a proxy for involuntary separations. Pre-trends are flat and statistically indistinguishable from zero. Separations decrease in the first year, after which they remain about 1ppt lower relative to the pre-event year. When pooling over the post-event period, we estimate a treatment effect of -0.0076 (SE = 0.0020), as shown in Column (1) of Panel A in Table 2. Relative to a pre-event mean of 0.11, this constitutes a decrease of approximately 7% in involuntary separations.

Next, we investigate a revealed preference measure of job quality, voluntary separations, in Panel (c) of Figure 5. We define voluntary separations as separations directly followed by another employment spell within the next month (see also Harju et al., 2025). In order to address potential concerns about re-classification of establishment identifiers, we also exclude observations where more than 30% of workers of an establishment exhibit a voluntary switch in the same year. In contrast to involuntary separations, voluntary ones do not respond to the event and stay relatively flat, with no indication of a downward dip in the year post-event. Accordingly, we estimate a pooled post-event effect of 0.001 (SE = 0.0008), displayed in Column (1) of Panel B in Table 2. Our evidence thus does not point to blue-collar representation leading to workplaces becoming more or less attractive in terms of workers voting with their feet.

We also further investigate exits due to establishment closure (or extensive margin exits) in Panel (d) of Figure 5. We define permanent exits as the disappearance of an establishment ID with the share of voluntary separations in that year of no more than 30%. There, we find a decline of 0.0021 (SE = 0.0006). Blue-collar representatives thus appear effective at preventing job loss due to establishment closure. These findings are consistent with the prediction of the bargaining model in Section 4, where higher employment bargaining power of blue-collar representatives translates into higher equilibrium employment and lower separations. A different potential explanation for the reduced permanent exits is that blue-collar representatives increase firm profitability, for example, through increased information sharing between worker and management (Jäger et al., 2020).

As a complement to the event-study approach, we focus on retirement-induced variation in the IV specification. We examine the same separation outcomes in Panel A of Table 2, Column (2). We find qualitatively similar, though smaller, effects in the IV specification compared to the event-study specifications, with a

decline in involuntary separations of -0.0036 (SE = 0.0022). This implies an effect size of about one quarter of the event-study estimate, when scaling with the corresponding increase in the blue-collar council share ($\frac{1}{0.462}$ in the event study and 1 in the IV specification).

Similar to the event-study design, we find no effects on voluntary separations in the IV specification. Likewise, the point estimate for the effect on establishment closure is essentially zero; the confidence interval includes the event-study estimate.

We see similar, albeit slightly larger, effects when restricting to retirement-induced events in the event-study design, i.e., when restricting to the subset of events where retirements only result in a sufficiently large increase of the blue-collar share on the works council. Column (3) of Table 2 shows the resulting estimates for this specification. For involuntary separations, the estimates are slightly larger than in the baseline event study (-0.0102, SE = 0.0037), and the estimates for the effects on voluntary separations are small and insignificant.

The difference-in-difference type IV specification that estimates effects relative to the pre-event period in Column (4) of Table 2 yields similar or, if anything, slightly larger results compared to the baseline specification. The point estimate for involuntary separations of -0.0059 (SE = 0.0027) is slightly larger than the baseline estimate. Estimates of other separation outcomes are close to their baseline counterparts.

A similar picture emerges for the intent-to-treat specification in Column (5) of Table 2 where the instrument is constructed based on individuals entering retirement age irrespective of their actual exit. The estimate for involuntary separations in this case is -0.0026 (SE = 0.0022). For the other outcomes, estimated effects are again small and not statistically significantly different from zero.

Wages We report effects on wages in Figure 6 and Table 3. In the event-study specifications, we document small, positive wage effects of 0.77 log points (SE = 0.30) at the 10th percentile (Panel (a) of Figure 6). Similarly, wage effects are slightly positive at the median and the 75th percentile (Panels (b) and (c)). Looking at changes in within-establishment inequality, measured as the ratio of the 75th to 25th wage percentile, in Panel (d), the results do not provide evidence for wage compression.

A roughly similar picture emerges from the IV specifications (Column (2) of Table 3), where we find positive effects of about 0.5 to 1.85 log points at the 10th, 50th, and 75th percentile of the wage distribution. The results point towards slight wage compression, although we cannot rule out equal effects for all three percentiles considered.

These positive wage effects vanish or even turn negative when implementing the difference-in-difference IV in Column (4). The stark contrast between this specification and the baseline IV specification suggests that the baseline specification suffers from differential pre-trends when considering wage outcomes. Note that the parallel trends assumption for our wage effects must hold at the different parts of the establishment's wage distribution. In contrast, our turnover results only require it to hold on average.

Overall, there is some weak evidence for small wage gains at the lower part of the wage distribution, though these effects are sensitive to estimating effects relative to pre-treatment in the IV specifications. The absence of strong wage effects is consistent with the model in Section 4, where the equilibrium wage depends on wage bargaining power p—which does not differ across representative types—but not on employment bargaining power q.

IV Complier Subgroup A potential explanation for (quantitatively) varying estimates between the event-study and IV designs in some cases, in particular involuntary separations, is a differential "complier" subgroup in the IV design. We perform a formal complier analysis for a stylized version of our IV design and report results in Column (5) of Appendix Table A5. We find that on most observable establishment-level characteristics (size, industry, region, workforce composition) the event-study treated firms and IV complier firms are broadly similar. Both are medium-sized, manufacturing-heavy, West German establishments. The one notable difference is in works council composition at baseline: IV compliers have a substantially higher share of professional blue-collar members on the council at baseline (0.69 vs. 0.39 for event-study treated firms). This suggests that, to the extent treatment effects are heterogeneous, differences in estimates between the two designs are not likely to be driven by differences in establishment characteristics in combination with heterogeneous treatment effects. Differences may stem from differences in the baseline level of blue-collar representation as well as in the nature of the variation (elections vs. retirement-induced changes in works council composition). For a formal exposition of the complier analysis see Appendix Section H. We also document only a modest degree of treatment effect heterogeneity along various dimensions in Section 5.3 below, further limiting the potential of complier characteristics to explain the observed differences in estimates.

Differences between Blue- and White-Collar Workers Motivated by the literature on substantive representation (Pitkin, 1967) and evidence of heterogeneity in blue- and white-collar workers' attitudes and preferences (see Section 3.2), we investigate the hypothesis that treatment effects might differ by worker type. In particular, we examine to what extent effects differ between blue- and white-collar workers and find broadly similar effects for both groups of workers. Appendix Figures A8 and A9 show group-specific event-study estimates for turnover and wages, respectively, whereas Appendix Table A6 shows estimates for the event-study and IV specification. For turnover, the effect sizes are very similar for both blue- and white-collar workers. The effect for blue-collar workers is similar to the pooled baseline and the difference to white-collar workers is usually small and insignificant.

The finding of similar effect sizes for blue- and white-collar workers also holds for the IV specification. Appendix Table A6 Column (2) shows baseline results for turnover, which provide no evidence for systematic differences between blue- and white-collar workers.

For wages, the difference between blue- and white-collar workers is at most modest and usually insignificant.

Taken together, elections of blue-collar representatives lead to similar effects on turnover for blue- and white-collar workers.

Composition of Hires and Separations We also investigate how blue-collar representation affects changes in the composition of workers newly hired or separated from the establishment. We define hires as new entries at the establishment between year $t-1$ and t and separations as exits between year t and $t+1$. For both groups, we broaden the set of worker groups to also include non-standard employment types such as mini-jobbers and vocational trainees.

We find no systematic evidence for a change in the number or the composition of hires along a variety of dimensions as documented in Appendix Table A7. One exception are mini-jobs for which hires go down in all specifications. Finally, we assess whether the composition of worker exits responds to the increased

number of blue-collar workers. Appendix Table A8 documents that there are no significant changes in the composition of regular (social-security-liable) jobs, trainees and the share of mini-jobs.

5.3 Heterogeneity

We investigate heterogeneity across a number of establishment-, representative- and worker-level characteristics. We find larger effects among workers with an above-average AKM individual fixed effects. Effects appear larger when a blue-collar worker enters the works council for the first time and among younger, higher educated workers though these differences are not statistically significant. We find no evidence that the effects of representation differ by the average size of the wage gains that representatives receive upon becoming a works council member at the respective establishment. We report detailed results based on our event-study specifications in Tables 4 and 5 with results for turnover and wages, respectively.

Firm-Level Heterogeneity We study heterogeneity between firms by interacting the treatment variable in the baseline specification with the heterogeneity variable of interest. First, we examine whether events that induce a shift towards a blue-collar majority on the council lead to stronger effects. Column (1) of Table 4 shows heterogeneity by whether the treatment induced a shift from white- to blue-collar majority. The difference is insignificant and small. Column (2) examines differences by whether a first blue-collar worker enters the council (the majority of cases) versus those where a blue-collar councilor has already been present. Effect sizes are larger when blue-collar workers enter for the first time, although these differences are not statistically significant. Column (3) investigates differences by establishment size. Effects are about 1/4 smaller in establishments above the median establishment size, though differences are again not statistically significant. Column (4) examines differences by sector. Compared to other sectors, effects are slightly weaker in the manufacturing sector, while this difference is again not statistically significant. Finally, Columns (5) and (6) examine whether the wage gains that newly elected professional works council members receive — relative to non-elected control workers — are correlated with the size of treatment effects. We implement this based on the sample from Section 5.5 by first calculating the wage gain of a newly elected works councilor over the first election period relative to a matched control worker. In a second step, we calculate the establishment-level mean of this variable. The size of this wage gain measure is not predictive for the effect size of separations.

Worker-Level Heterogeneity We examine heterogeneity between workers by re-collapsing the individual level data on the more granular establishment $\times$ blue-/white-collar $\times$ individual heterogeneity group $\times$ year level by adding the individual-heterogeneity group dimension. We estimate the event-study specification on this dataset and interact the individual heterogeneity measure with the treatment. In this case, we control for individual-heterogeneity $\times$ establishment level fixed effects. Column (7) shows differences in heterogeneity by whether individuals are above vs. below age 50. Workers above 50 are 0.27ppt less affected, with the difference not significant at common levels. Column (8) shows differences by whether education level is above vs. below high school degree. The estimated difference is notable but not statistically significant. Column (9) examines whether the effects are concentrated among individuals with above or below-average ability, which we proxy by using the within-establishment rank of the individual fixed effect from an AKM decomposition (Bellmann et al., 2020). The effects are significantly larger for individuals with individual fixed effects above that of the median worker at the establishment.

Overall, heterogeneity along a variety of observable dimensions appears at most modest. This point is reinforced when adjusting for multiple hypothesis testing.

5.4 Robustness

We implement a number of tests and alternative specifications to probe the robustness of our findings.

Alternative Blue-Collar Definitions Our first set of robustness tests, documented in Appendix Table A11, examines the robustness of the event-study and IV specifications to alternative occupation-based group definitions, namely workers that perform primarily routine jobs (Columns (3) and (4)), and a more narrow blue-collar definition that excludes simple service occupations (Columns (5) and (6)). Panels (a) - (c) examine robustness for different turnover outcomes. In all except one case, estimates for involuntary turnover are negative, and in the same ballpark or somewhat smaller as the baseline result (Columns (1) and (2)). For the event-study design, the effect size for blue-collar jobs excluding simple services is somewhat smaller than the baseline effect (-0.0052, SE = 0.0019). When considering routine jobs effect sizes are somewhat smaller and insignificant (-0.0023, SE = 0.0021). For the IV specifications, effect sizes are smaller and insignificant in both specifications but still of roughly similar magnitude compared to those of the baseline estimate. For voluntary turnover, estimates remain close to zero in all cases, with all coefficients being smaller than 0.001 in absolute terms. For permanent exits, coefficients in the event study are consistently close to the baseline specification. Turning to wages in Appendix Table A12, we see positive effects in most specifications at the 10 percentile, though coefficients appear somewhat less stable between specifications than for turnover outcomes.

White-Collar Representation Our event-study specification uses large increases in blue-collar representation. Appendix Tables A13 and A14 examine the reverse, i.e., what happens in case of large shifts from blue- to white-collar representation. The results are insignificant and close to zero.

Despite large standard errors due to large white-collar shifts being only about half as frequent as blue-collar events (1,065 events), we can reject that the effects of decreasing blue-collar representation are of the same magnitude as the effects of increasing blue-collar representation. Downward nominal wage rigidity or the difficulty to undo previously installed job-protection measures might explain this asymmetry.

Varying Establishment Size Cutoffs Appendix Tables A15 – A20 show results for varying establishment size cutoffs. Panel A replicates results for the current baseline, whereas Panel B to Panel E exclude establishments above 4000, 2000, 1000 and 500 employees respectively. Our main results are robust to the varying establishment size cutoff. In particular, the coefficients for involuntary separations stay close to the baseline for all size-restrictions between -0.0082 (SE = 0.0032) and -0.0106 (SE = 0.0021), whereas the coefficients for permanent exits increase in absolute size but stay in the same ballpark. For voluntary separations the event-study coefficient turns negative and significant when focusing on smaller establishments (-0.0016, SE = 0.0008 for establishments up to 1000 employees) consistent with a revealed preference of workers for blue-collar representatives, though the IV evidence is more mixed.

Changes in Establishment- and Works Council Composition A key concern is that large shifts in representation might coincide with broader changes in firm characteristics. Appendix Tables A21 and

A22 examine how establishment and works council composition evolve around the event. We find no notable changes in establishment size, the share of blue-collar workers in the workforce, or the educational composition of the workforce. Works council composition does shift—as expected— with councils becoming younger and having lower average wages, consistent with the mechanical replacement of outgoing representatives. We also examine how our baseline results change when controlling directly for observed works council composition (council age, mean wage, gender share, share non-German, and education) in Appendix Tables A23 and A24. The estimates remain very similar, indicating that the effects operate through the blue- vs. white-collar dimension of representation rather than through correlated changes of other council member characteristics.

Varying Post-Event Window Results are relatively similar when varying the post-event window over which the treatment effects are calculated. Results in Columns (7) and (8) of Appendix Table A11 examine outcomes over a 3-year window post-event instead of the 5-year window in the baseline specification. Columns (9) and (10) look at a 7-year window post-event. Both specifications deliver results that are quite similar to the baseline estimates.

Only Election Year Results Our baseline works council definition is based on an imputed works council measure that assigns within-election period changes to election years. This could introduce measurement error if some turnover actually happens within election periods, but should only attenuate our findings. Column (11) of Appendix Table A11 reports results for cases where the actual and imputed definitions coincide. Effect sizes are very similar to the baseline estimate (-0.0073, SE = 0.0027), speaking against an important role of attenuation of our baseline results.

Different Retirement Thresholds Our retirement IV uses exits at age 63, yet in Figure A7, we also observe excess exits at age 60 and 65. Columns (12) and (13) of Appendix Table A11 therefore report whether the results also replicate when we use exits at age 60 or 65 as an instrument. The results of both these specifications are comparable to the baseline threshold of age 63.

Alternative Turnover Definitions We consider alternative turnover definitions in Appendix Table A25. In Panel A, which restricts to non-permanent exits (i.e., individuals returning to the labor market eventually), we see effect sizes about half of that of our baseline specification in the event-study sample and even smaller effect sizes in the IV specification, which speaks to an important role of individuals dropping out of the labor market after separation. Finally, Panel B looks at a balanced sample of establishments where we restrict to the subset of treated and matched-control pairs that stay in the sample between years -1 to 5 around the event. All specifications deliver estimates that are close to the baseline estimates. This is in line with establishment closures only playing a small role for the overall effect. Overall, differential attrition seems to not play a major role in our setting.

Fixed Worker Composition The effects on wages could stem in part from changes in the composition of workers. Appendix Figure A10 shows event-study graphs for the subset of workers that stay at the same establishment in the +/- 5-year window around the event. Results look broadly similar to the main specification which speaks against an important role of worker selection.

5.5 Returns to Becoming a Works Council Member

Having documented the effects of blue-collar representation on the represented workforce, we now turn to the outcomes of the representatives themselves. In this subsection, we empirically investigate the labor market returns of becoming a professional works council member and examine whether these returns differ by collar type. We discuss our findings through the lens of our model from Section 4.

While released from their regular work duties, professional worker representatives continue to be paid by their employer. By law, the salary of professional worker representatives should track the salary that they would have received in a hypothetical scenario where they would have continued with their regular career. This requirement comes with the challenge of calculating wages in a counterfactual, hypothetical career, leaving firms with leeway in deciding how much to pay.

To investigate the wage effects of becoming a professional worker representative, we compare the average wage trajectory of works councilors around the time of their first election to the works council to that of a control group of similar workers from the same establishment that did not become professional works council members.

In particular, we match to each professional works councilor an observationally similar control worker within the same *establishment* $\times$ *tenure* $\times$ *blue-/white-collar* cell. We require that (1) control workers are never observed as members of any works council throughout their career and (2) both works councilors and control workers are full-time employed at the match establishment in the year of election and the five previous years. Conditional on these restrictions, we use 1:1 propensity score matching based on age, age-squared, daily real wages as well as dummies for 2-digit occupations and three educational groups. We obtain propensity scores from a logit regression at the time of establishment entry where we pool over all cells. In a second step, we then select the worker with the propensity score closest to the works council member within each cell as the control unit. Appendix Table A26 shows that characteristics of professional works councilors in the matched sample are similar to characteristics of the full sample we observe in the IEB.

Figure 7 shows how different labor market outcomes evolve separately for representatives and the matched control group around works council elections and documents substantial wage premia for works councilors. Panel (a) plots the mean real log-wage profiles for representatives and matched control workers, focusing on a balanced sample of individuals who remained employed throughout the displayed time period. Log-wages of professional council members exhibit slightly higher levels, but very similar pre-election trends. Upon election as a professional works councilor in $t = 0$, a stark divergence emerges in the wage trajectories. Professional worker representatives experience a substantial immediate wage increase, contrasting with the control group that exhibits no comparable wage change. This divergence persists and compounds over time, with professional worker representatives continuing to outpace their matched controls in wage growth. Adjusting for differences in pre-event levels, wages of professional worker representatives are about 6% higher than that of the control four years after the election and at the end of their first term.

A similar picture emerges when considering earnings as an outcome where non-employment periods are included as zeros. Panel (b) shows raw daily real earnings profiles for representatives and matched control workers, with non-employment periods post-event included as zeros. Before elections, trends of works council members and controls evolve very similarly, but start to diverge in the event period. At the end of their first

term, daily earnings are about 8 Euros or about 10% higher than those of matched control workers. Panel (c) reveals that works councilors also exhibit lower separation rates post election than their matched controls. They are less likely to be employed by other companies and experience lower incidences of non-employment.

Finally, Panel (d) shows wage trajectories separately for blue- and white-collar works councilors compared to the respective control groups. White-collar profiles exhibit higher wage levels before election to the works council as a professional member. Notably, wage differences between works councilors and their control group are concentrated among blue- rather than white-collar councilors. In particular, blue-collar councilors have around 7% higher wages four years after election relative to their respective control group. In contrast, white-collar workers experience a wage increase of only around 2% that is insignificant at common significance levels.

Appendix Table A26 provides complementary summary statistics on careers of works council members. In the year of their first election, representatives in the matched sample are about 44 years old and have worked at the current establishment for approximately 12 years. They serve on average 12 years (corresponding to three terms) as professional council members, with 76% of works councilors serving for at least two terms. After exiting the works council, individuals have — if any — only short employment spells, especially at the same establishment.

We complement our analysis of wage and labor market effects upon becoming a professional representative with a similar analysis that examines labor market outcomes around the end of a professional representative career on the works council. Appendix Figure A11 Panel (a) shows the evolution of wages around works council exit for a balanced sample of representatives remaining in the workforce for at least another 10 years. Note that Appendix Table A26 shows that the median representative also permanently exits the workforce when exiting the council. For those who continue to work we do not find a notable discontinuity in wages. Panel (b) plots the share of representatives *currently* in a blue- and white-collar occupation for the full sample, where we would like to recall that we define blue- and white-collar *representatives* by their occupational history. First, before joining the works council, the share in white-collar occupations are close to 0 and 1, respectively, lending further support to our working assumption that occupational histories are stable in terms of blue- and white-collar occupations prior to becoming a professional representative. Second, while a notable share of blue-collar representatives continues working in a white-collar occupation after they exit the works council (6.2% on average over the pre-periods vs. 39% in the first year post exit), a majority of 61% switches back to a blue-collar role.

In sum, becoming a professional works council member is an attractive career path—especially for blue-collar workers. These differential returns are consistent with the model's prediction in Section 4: firms optimally transfer larger resources to representatives who start with higher employment bargaining power q_0, and blue-collar representatives—who have greater q_0 reflecting the stronger job security preferences of the workers they represent—receive correspondingly larger transfers. In contrast, the differential returns are less consistent with a human capital explanation. In particular, the fact that professional works council members seldom return to working as non-representatives at their own firm, coupled with the fact that the earnings premium of becoming a representative arises within the first few years, is hard to reconcile with a pure human capital explanation.

5.6 Discussion

The bargaining model developed in Section 4 provides a unified account of the findings in this section. By operationalizing the documented preference heterogeneity between blue- and white-collar workers (Section 3.2) as differences in bargaining power over employment, the model can simultaneously rationalize four empirical patterns: (i) blue-collar representatives reduce involuntary separations, (ii) there is no effect on the wages of represented workers, (iii) becoming a representative raises own earnings, and (iv) these earnings gains are larger for blue-collar representatives. Crucially, the model resolves the apparent puzzle that preference-driven reductions in separations are not accompanied by wage reductions: in Manning's 1987 framework, the equilibrium wage depends on wage bargaining power p—which does not differ across representative types—but not on employment bargaining power q. The representative's own wage gains arise because the firm optimally transfers resources to attenuate the representative's employment bargaining power, with larger transfers required for blue-collar representatives who start with higher q_0 (Lemma 2). Together with the broadly similar selection of blue- and white-collar representatives documented in Section 3.3, the model provides a coherent framework for interpreting the full set of results.

6 Conclusion

Our analysis examined both substantive and descriptive representation of blue-collar workers on German works councils. Using event-study and retirement-IV designs, we find that electing blue-collar representatives significantly reduces involuntary separations and plant closures, while having limited effects on wages. These effects on job security align with the stronger concerns about job loss and unemployment expressed by blue-collar workers, providing evidence that descriptive representation leads to substantive representation that reflects workers' preferences.

We develop a simple bargaining model, extending Manning's 1987 framework, that can jointly rationalize these findings: blue-collar representatives' greater bargaining power over employment raises job security without affecting wages, while the firm's optimal response of transferring resources to the representative generates the observed representative wage premium. The heterogeneity in bargaining power captures the substantial differences in worries about job-loss and preferences for job security that we document for blue-collar workers relative to their white-collar counterparts. These preference differences persist even among elected representatives and provide a rationale for how *descriptive* representation of blue-collar workers can lead to *substantive* representation. Consistent with the model, we find that becoming a professional worker representative leads to substantial wage gains for the new representatives themselves, particularly for blue-collar workers, consistent with firms buying down the higher bargaining power of their blue-collar representatives. We show in addition that both blue- and white-collar professional representatives are positively selected in terms of pre-election earnings and person fixed effects, exhibiting higher levels of political interest and engagement.

Our findings on substantive representation should be interpreted as evidence on how the composition of worker representation affects outcomes within establishments that already have works councils. As such, the paper does not identify the effect of introducing worker representation relative to settings in which it is absent. Instead, we study an empirically important but understudied margin: heterogeneity in the type of representatives within existing institutions. This margin is particularly relevant in settings where works

councils are prevalent, such as larger firms in Germany and in many other European economies.

More broadly, our results highlight how institutions can shape economic outcomes through representation. The effects of worker representation depend not only on whether such institutions exist, but also on who represents workers within them. The substantial effects we find for works council representation contrast with more muted effects found in studies of worker representation on corporate boards, including in Germany (Jäger et al., 2020, 2022b). This suggests that works councils' direct involvement in shop-floor decision-making and their extensive codetermination rights may be particularly effective at translating worker preferences into concrete outcomes. Understanding these institutional channels remains an important area for future research.

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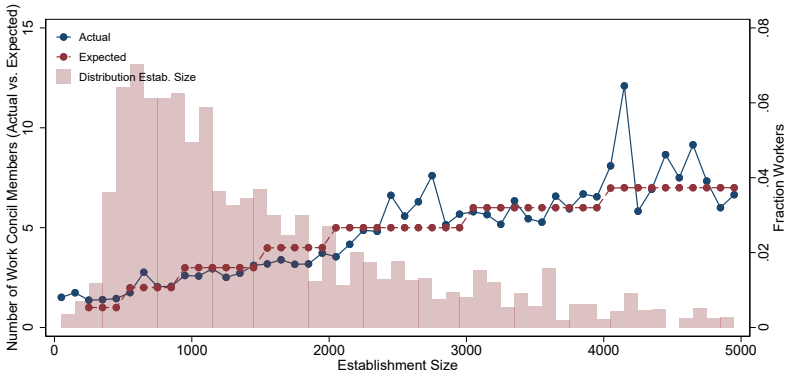
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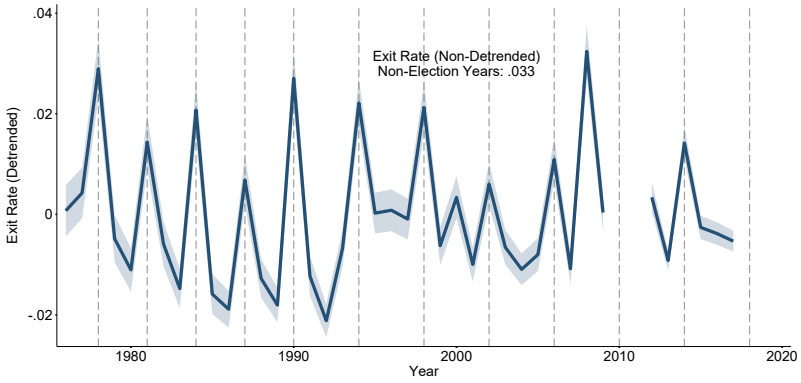
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Figures and Tables

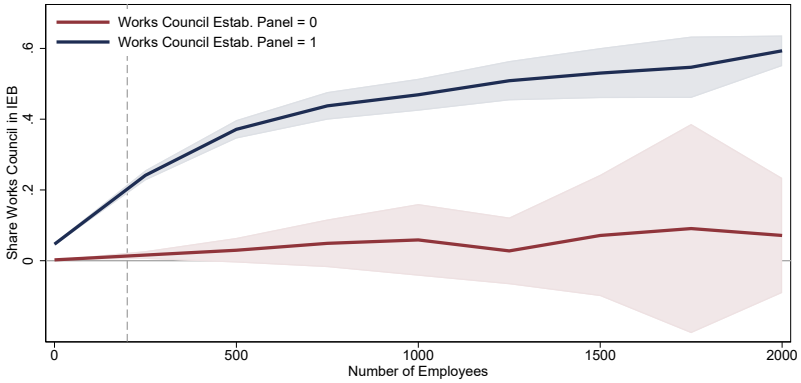
Figure 1: Validation Exercises for the Works Council Measure in the Administrative Data



(a) Expected vs. Actual Number of Professional Councilors by Estab. Size



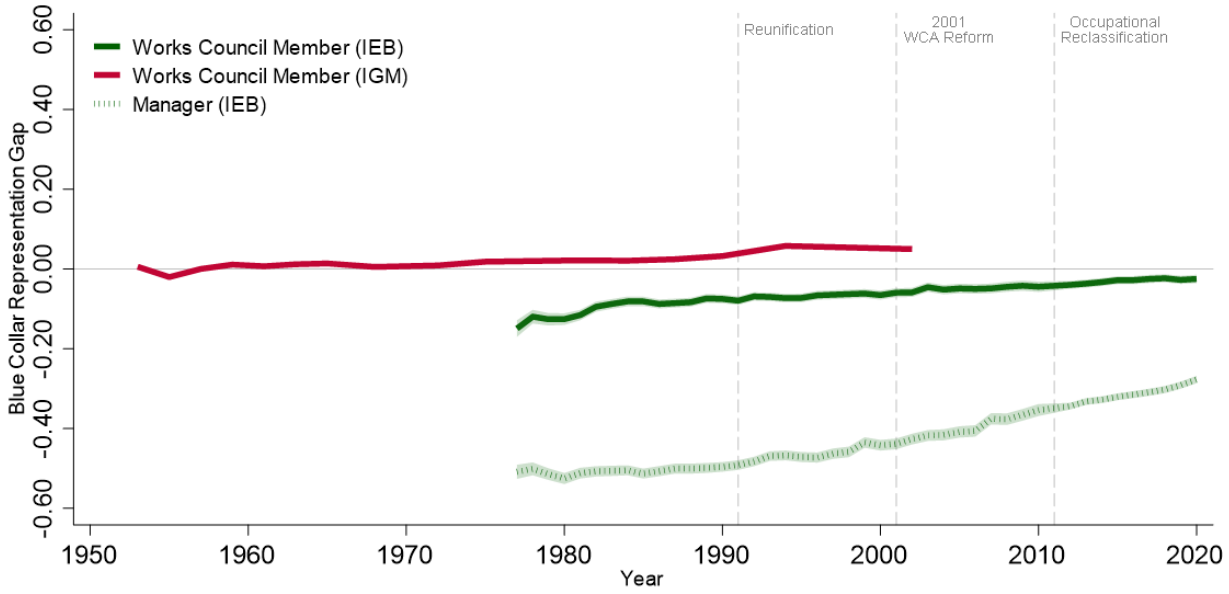
(b) Excess Professional Works Councilor Exits in Election Years



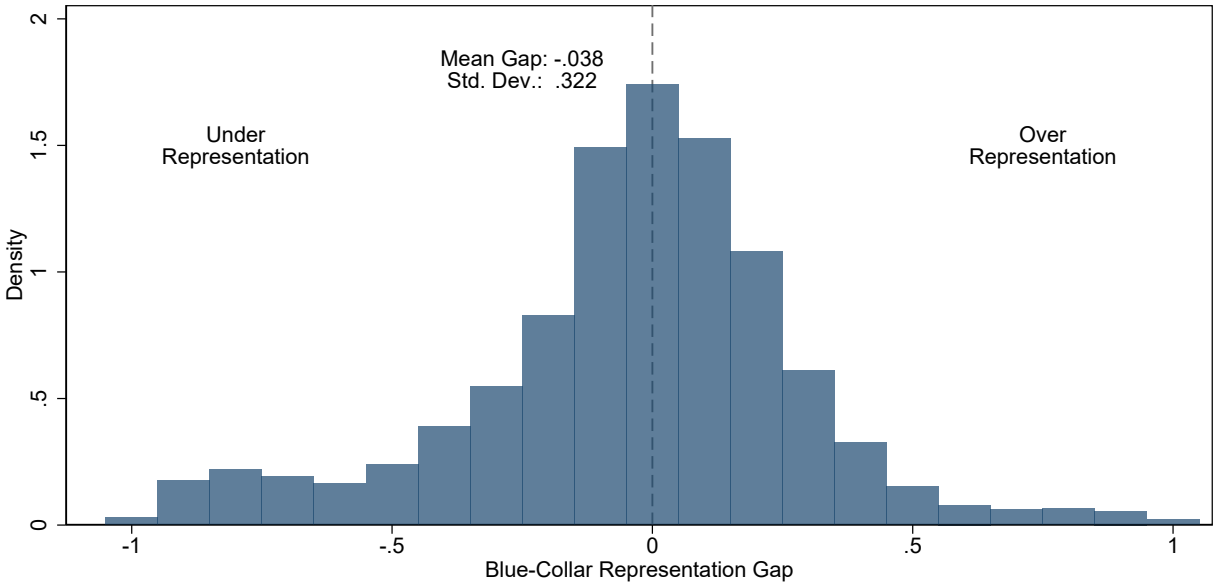
(c) WC Member in IEB vs. Works Council Reported in Establishment Panel

Notes: This figure shows three different validation exercises for the professional works councilors measure in the admin data. Subfigure (a) shows the alignment of the expected works council size by number of employees and the number of observed works council members for that period. It also shows the firm-size distribution (weighted with the number of individuals) for our sample in the baseline year. Subfigure (b) plots the de-trended share of individuals exiting professional works council status defined as individuals leaving works council member-status but remaining at the establishment, with the non-election year mean displayed in the figure. The year 2011 is excluded due to occupational re-coding in that year. Subfigure (c) compares information on the existence of a works council from the IAB Establishment Panel with the existence of at least one professional works councilor at the establishment based on the linked administrative data and our approach of identifying professional works councilors. Comparisons are by establishment size, with a step size of 250; values above 2000 are winsorized. The comparison is restricted to establishments that report either always or never having a works council in the IAB Establishment Panel, and shows, for each of these groups, the share of establishments with at least one professional works councilor based on our IEB definition. Shaded areas indicate 95% confidence intervals.

Figure 2: Descriptive Representation of Blue-Collar Workers



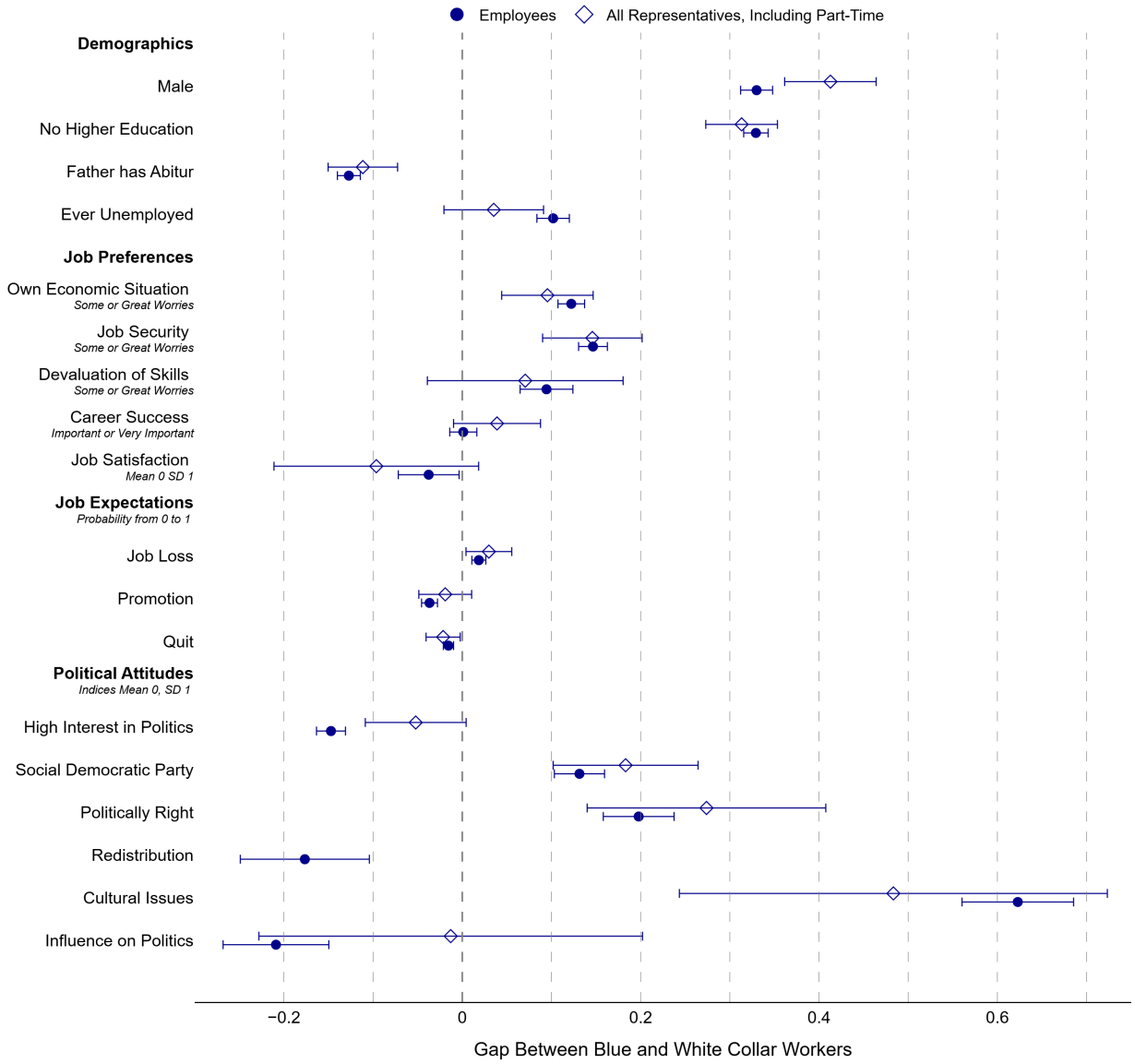
(a) Convergence in Blue-Collar Representation



(b) Establishment-Level Heterogeneity in Blue-Collar Representation

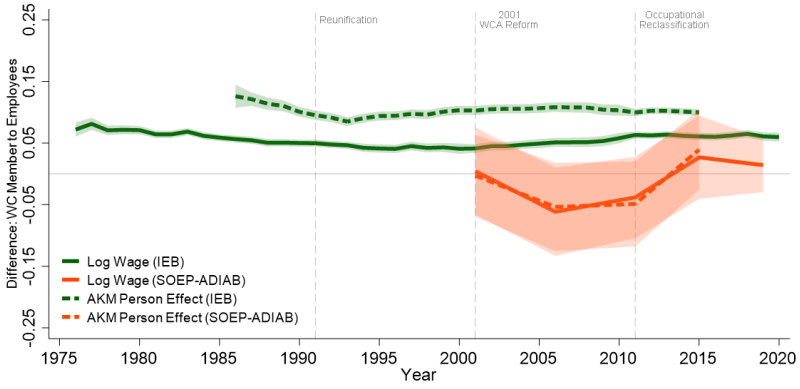
Notes: Sub-figure (a) shows the evolution of the difference in blue-collar status between works council members and regular employees (not in a works council) and managers, where managers are defined by occupation code 751 of KldB 1988 ("Entrepreneurs, Managers, and Division Managers"). To define blue-collar status for managers and works council members we take their last occupation code before becoming a manager or works council member. Shaded regions represent 95% confidence intervals. The time series for professional works council members is based on administrative data from the IEB. The IGM data comes from yearly reports by the Metal Union (IGM) and includes establishments covered by IGM collective bargaining agreements. For details on the datasets, see section 2. The time series are weighted to be representative of (regular) employees at establishments with a works council. We correct the IEB time series for a break in 2011 due to the occupational reclassification, by estimating an RD model with a second-order polynomial and a bandwidth of 5 years on each side and adding the estimated discontinuity to the *past* time series. Sub-figure (b) shows the distribution of the establishment-level representation gap post 2011 with observations weighted by number of regular employees.

Figure 3: Blue-Collar versus White-Collar Preferences by Works Council Membership (SOEP)

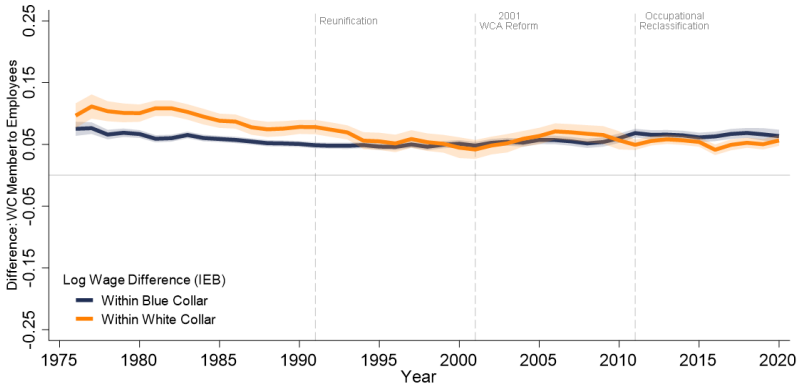


Notes: This figure compares characteristics of blue-collar to white-collar workers separately for employees and works council members, both part-time and professional. For each variable, estimated means for blue- and white-collar workers are plotted. Bars indicate 95% confidence intervals based on a normal approximation constructed using standard errors clustered at the individual level. Non-WC-member employees are only included for workplaces with a works council. For details on the variable construction, see Appendix Section C. Sample: age 20-65, full-time or part-time employment, not in school, not self-employed, not in civil service, not in apprenticeship or managerial position. Sample size (individuals, SOEP Core): $N^{rep}_{blue} = 486$, $N^{rep}_{white} = 743$, $N^{emp}_{blue} = 5066$, and $N^{emp}_{white} = 8436$.

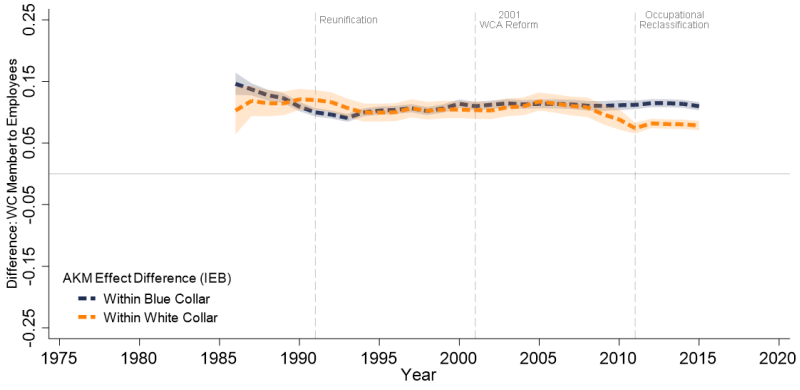
Figure 4: Selection on Pre-Council Wages and AKM Person Effects



(a) Difference in Wages and AKM Person Effects



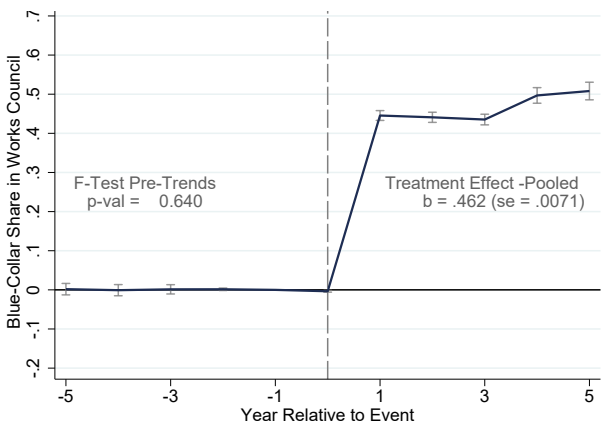
(b) Difference in Wages: By Blue-Collar



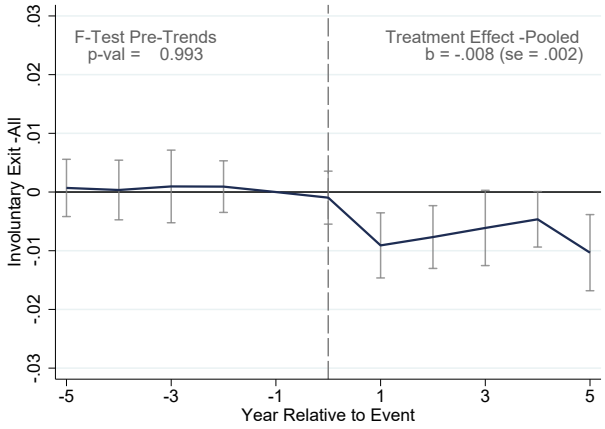
(c) Difference in AKM Person Effect: By Blue-Collar

Notes: This figure shows the evolution of the differences in log real wages and AKM individual fixed effects between works council members and regular employees (not in a works council) in establishments with works councils over time. Shaded regions represent 95% confidence intervals. Wage and AKM person effect differences are constructed by first computing the difference of each works council member to the median full-time employee before averaging over all works council members. For sub-figures (b) and (c) we separately consider differences of blue- and white-collar works council members to the median blue- and white-collar employee, respectively. For works council members, we consider wages from the last year before joining the works council. The time series for professional works council members is based on administrative data from the IEB, the time series for all works council members (professional and part-time) is based on survey data from the SOEP. For details on the datasets, see section 2. The time series are weighted to be representative of (regular) employees at establishments with a works council. We correct the IEB time series for a break in 2011 due to the occupational reclassification, by estimating an RD model with a second-order polynomial and a bandwidth of 5 years on each side and adding the estimated discontinuity to the *past* time series.

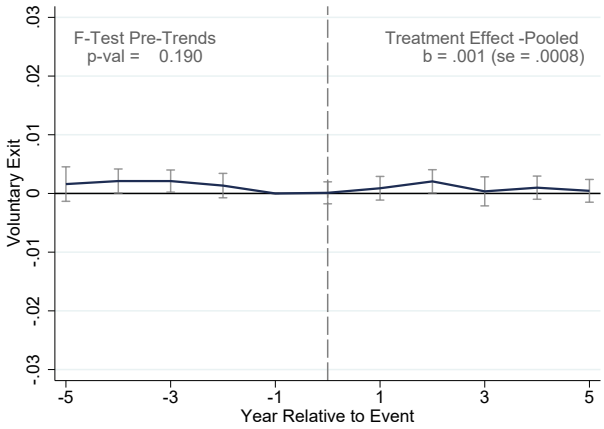
Figure 5: Event Study Estimates – Effect of Blue-Collar Representation on Turnover of Blue- and White-Collar Workers



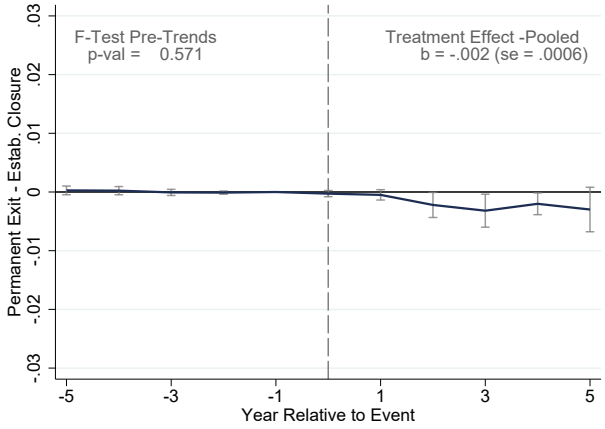
(a) Share of Blue-Collar Works Council Members



(b) Involuntary Turnover



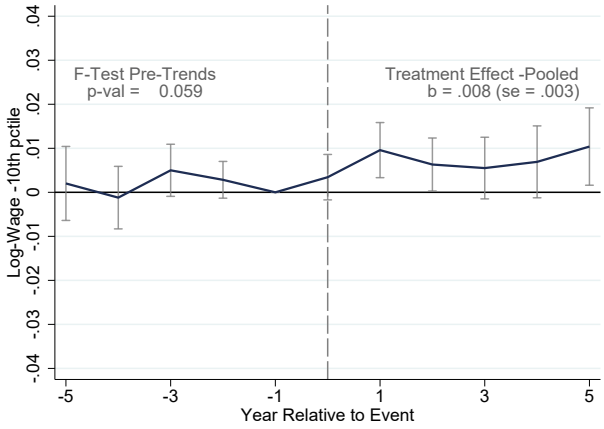
(c) Voluntary Turnover



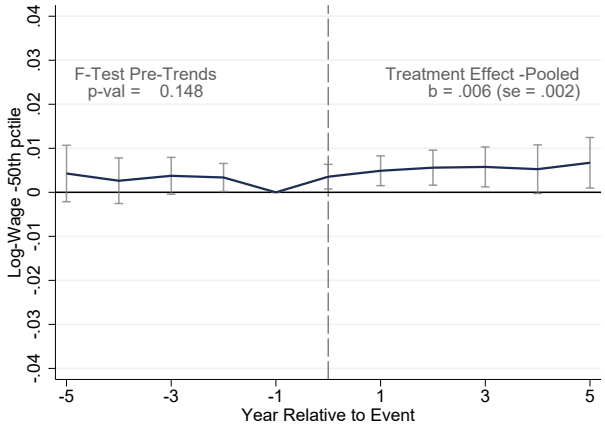
(d) Exits on the Extensive Margin (Establishment Closures)

Notes: The figure presents event-study estimates for treated establishments that experienced their first large increase in the share of professional blue-collar representatives in their works council (increase $\geq$ 33 percentage points relative to the pre-event year)y. Event-study specifications include matched control establishments that never underwent such an increase, using pre-event 1:1 propensity score matching based on log-firm-size, firm size dummies, blue-collar composition of the workforce and works council, state-dummies and a dummy for manufacturing industries in the year prior to event. Event study specifications are pooled for both groups, and include establishment, year-to-event, year-to-event-group, and year FE. The estimates are weighted by the size of the workforce, excluding professional works council members. Corresponding event-study estimates separately by group are included in Appendix Figure A8. Standard errors are clustered at the establishment level.

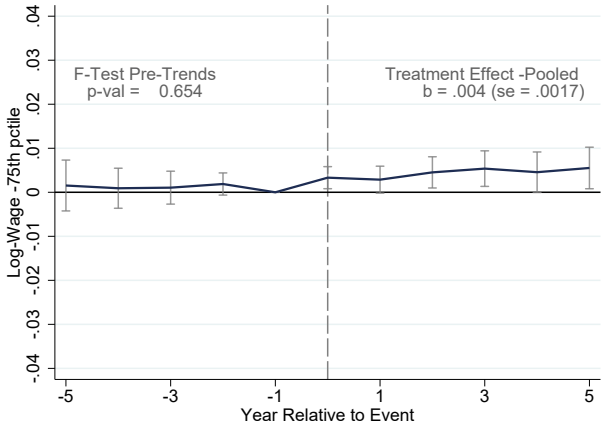
Figure 6: Event Study Estimates: Effect of Blue-Collar Representation on Wages



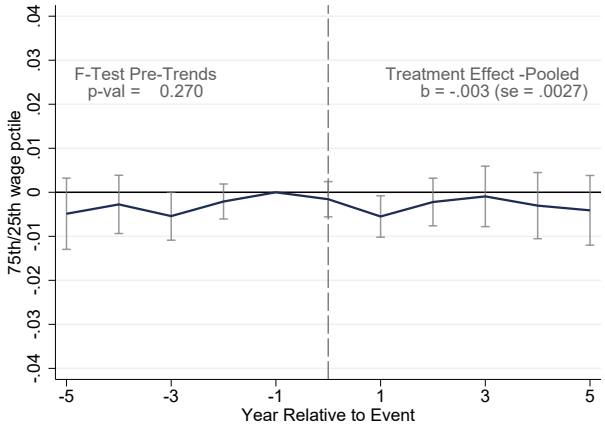
(a) 10th Percentile Log-Wages



(b) Median Log-Wages



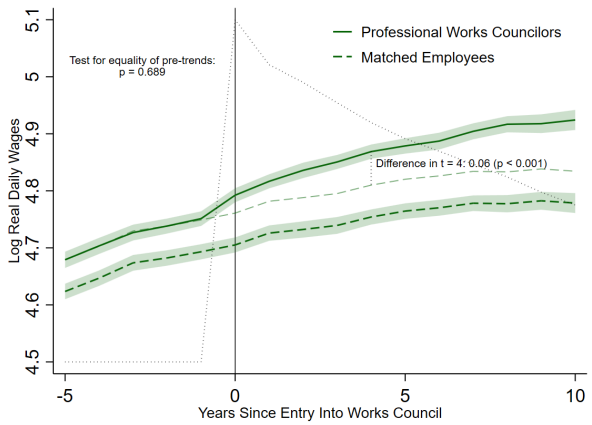
(c) 75th Percentile Log-Wages



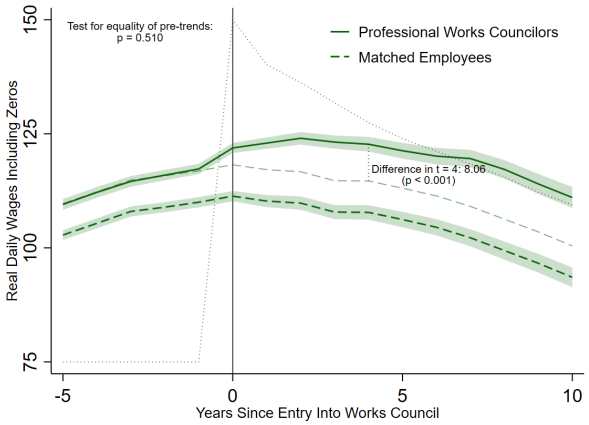
(d) 75th/25th Percentile Wage Ratio

Notes: The figure presents event-study estimates for treated establishments that experienced their first large increase in the share of professional blue-collar representatives in their works council (increase $\geq$ 33 percentage points relative to the pre-event year) at treated establishments. Event-study specifications include matched control establishments that never underwent such an increase, using pre-event 1:1 propensity score matching based on log-firm-size, firm size dummies, blue-collar composition of the workforce and works council, and state-dummies and a dummy for manufacturing industries in the year prior to event. Event study specifications are pooled for both groups, and include establishment, year-to-event, year-to-event-group, and year FE. The estimates are weighted by the size of the workforce, excluding professional works council members. Corresponding event-study estimates separately by group are included in Appendix Figure A9. Standard errors are clustered at the establishment level.

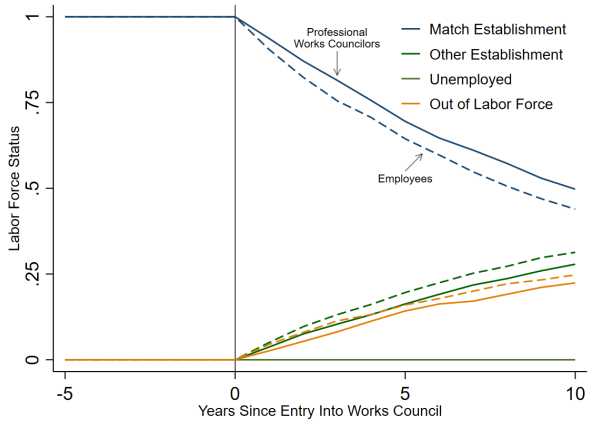
Figure 7: Career Effects of Becoming a Professional Works Council Member



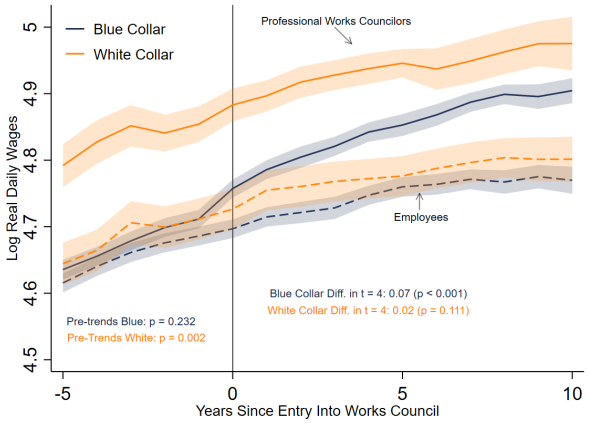
(a) Log Real Wage



(b) Real Wage With Zeros



(c) Labor Force Status



(d) Log Real Wage By Blue-Collar Status

Notes: This figure shows wage and employment profiles of professional works councilors around the time they became professional works councilors relative to a matched control worker from the same *establishment* × *tenure* × *blue-/white-collar* cell. Matching is performed in the year of entry into the firm. We use 1:1 propensity score matching based on wages, education levels, age, age squared and 2-digit occupation (pooled over all establishments) to assign the observationally closest control within each cell. Additionally, we require all individuals to be full-time employed at the match establishment in the event and pre-event periods. Panel (a) shows the evolution of log real wages before and after the event conditionally on staying in employment. The dotted line in the background shows the share of treated individuals in a works council ranging from 0 in the pre-period to 1 in the year of the event. Panel (b) depicts the evolution of the level of real wages including periods of non- and unemployment as zeros. Panel (c) provides insights into labor market status around the event, segmenting labor market status into four mutually exclusive and exhaustive categories: employed at the match firm, employed at another firm, unemployed (UI receipt) and out of the labor force. Panel (d) plots log wage profiles separately for blue- and white-collar workers as defined in the year of matching. The test for differential pre-trends reported in Panels (a), (b), and (d) tests the joint hypothesis that each individual pre-period difference is not different from the average pre-period difference. Sample size at $k = 0$: Without balance restrictions $N^t = N^c = 3,050$ in Panels (b) and (c), with balance restriction $N^t = N^c = 1,619$ in (a) and (d).

Table 1: Differences between Blue- and White-Collar Workers

	Employees (Never in Works Council)			Works Council Member		
	(1) Blue-Collar	(2) White-Collar	(3) Difference (SE)	(4) Blue-Collar	(5) White-Collar	(6) Difference (SE)
Panel A: Demographics and Labor Market Experience						
Female	0.269	0.599	-0.33*** (0.009)	0.152	0.565	-0.413*** (0.026)
University Degree	0.061	0.39	-0.329*** (0.007)	0.035	0.349	-0.313*** (0.021)
Father has Abitur	0.06	0.187	-0.127*** (0.007)	0.059	0.171	-0.111*** (0.02)
Ever Unemployed	0.37	0.268	0.102*** (0.009)	0.291	0.256	0.035 (0.028)
Panel B: Job Preferences						
Do you have some or great worries about ...						
... Own Economic Situation	0.74	0.617	0.122*** (0.008)	0.721	0.625	0.095*** (0.026)
... Job Security	0.56	0.413	0.147*** (0.008)	0.53	0.385	0.146*** (0.028)
... Devaluation of Skills	0.321	0.226	0.094*** (0.015)	0.273	0.202	0.071 (0.056)
Career Success: (Very) Important	0.822	0.821	0.001 (0.008)	0.85	0.811	0.039 (0.025)
Job Satisfaction (Std.)	-0.038	-0.0	-0.038* (0.017)	-0.096	0.0	-0.096 (0.059)
Panel C: Occupational Expectations over Next Two Years						
How likely is it that you will experience the following career changes within the next two years? (0-100%)						
Job Loss	19.351	17.495	1.857*** (0.398)	18.831	15.848	2.983 (1.309)
Promotion	16.647	20.317	-3.671*** (0.455)	17.04	18.95	-1.909 (1.511)
Quit	6.535	8.084	-1.549*** (0.292)	5.845	7.991	-2.145 (0.977)
Further Training	27.431	47.231	-19.8*** (0.642)	30.85	49.058	-18.208*** (2.24)
Panel D: Job Situation						
With which statements about possible job-related burdens of your current job do you agree?						
Bad Promotion Prospects	0.641	0.597	0.044*** (0.013)	0.649	0.654	-0.005 (0.043)
Job at Risk	0.211	0.151	0.06*** (0.01)	0.176	0.142	0.034 (0.033)
Insuff. Recognition by Superiors	0.375	0.335	0.04*** (0.013)	0.51	0.38	0.129* (0.045)
Wage not Fair Given Effort	0.504	0.474	0.03* (0.013)	0.588	0.538	0.05 (0.045)
Panel E: Political Attitudes						
High Interest in Politics	0.286	0.433	-0.147*** (0.008)	0.436	0.489	-0.052 (0.029)
Politically Right (Mean 0, SD 1)	0.198	0.0	0.198*** (0.02)	0.274	0.0	0.274*** (0.068)
SPD	0.428	0.297	0.131*** (0.014)	0.533	0.35	0.183*** (0.041)
Cultural Issues Index	0.43	-0.193	0.623*** (0.032)	0.33	-0.153	0.483*** (0.122)
Influence on Politics Index	-0.126	0.083	-0.209*** (0.03)	0.063	0.076	-0.013 (0.11)
Redistribution Index	-0.091	0.086	-0.177*** (0.037)			
N Observations	7529	13431		598	970	
N Individuals	5066	8436		486	743	

Notes: The table shows differences between blue and white-collar workers using the SOEP survey data. Blue-collar jobs are defined as agricultural, simple and qualified manual occupations, simple service occupations, and technicians. See Appendix Section D for details. *Panel A*: Indicator variables on demographic background and labor market experience. *Panel B*: Individual worries are surveyed on a three-step scale (big, some, or no worries) and we combine the first two categories. We standardize reported job satisfaction (0-10 scale) to have mean zero and SD one in the sample. *Panel C*: Answers for occupation expectations are on a 0 (definitely not) to 100 (certainly) scale in steps of 10. *Panel D*: Each item asks whether individuals agree that their current job is characterized by a given feature. *Panel E*: High interest in politics is a dummy for reporting strong over very strong interest in politics as opposed to not so strong or none at all. Politically Right is the self-reported position on a 0 (most left) to 10 (most right) scale, standardized to mean zero and SD one. SPD is a dummy for including the SPD among preferred parties. Cultural Issues Index combines questions on gender and migration (higher index = more right-wing). Influence on Politics Index combines questions on self-perceived influence of respondents on politics (lower index = less influence). Redistribution Index combines questions on stances on taxation and welfare (higher index = more right-wing). For details on the construction of the indices, as well as all other outcomes, see Appendix Section C. Sample: Survey years 1999-2019, full-time or part-time employment and occupation information, age 20-65, not self-employed, not in civil service, not in an apprenticeship or school. Note some variables are only surveyed in a subset of years. Standard errors are clustered at the individual level. Asterisks denote significance levels * = 0.1, ** = 0.05, and *** = 0.01 using Romano-Wolf p-values correcting for testing all displayed hypotheses simultaneously (except for the Redistribution Index from the SOEP IS). For details see Clarke et al. (2020).

Table 2: Effects of Blue-Collar Representation on Turnover of Blue- and White-Collar Workers

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Involuntary Exits					
Blue-Collar Representation	-0.0076***	-0.0036*	-0.0102***	-0.0059**	-0.0026
	[0.0020]	[0.0022]	[0.0037]	[0.0027]	[0.0022]
Mean Dep Var	0.08	0.12	0.08	0.12	0.12
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Voluntary Exits					
Blue-Collar Representation	0.0010	-0.0009	0.0024	-0.0005	-0.0009
	[0.0008]	[0.0007]	[0.0027]	[0.0009]	[0.0007]
Mean Dep Var	0.01	0.01	0.01	0.01	0.01
N Obs.	74160	314775	13654	273790	314775
N Establishments	2190	16352	391	14853	16352
Panel C: Exits on the Extensive Margin (Establishment Closures)					
Blue-Collar Representation	-0.0021***	0.0000	-0.0020	0.0001	0.0005
	[0.0006]	[0.0015]	[0.0015]	[0.0017]	[0.0016]
Mean Dep Var	0.00	0.04	0.00	0.05	0.04
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Increase Council Share	.462	1	.465	1	1

Notes: The table presents estimates of the effect of blue-collar representation on turnover. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) show baseline results for the event-study and IV specification, respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) shows results for a difference-in-difference-type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention-to-treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits. N Establishments in event-study specifications refers to treated establishments only.

Table 3: Effects of Blue-Collar Representation on Wages of Blue- and White-Collar Workers

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event (1)	IV (2)	Event (3)	DiD-IV (4)	ITT-IV (5)
Panel A: Log-Wage 10th Percentile					
Blue-Collar Representation	0.0077***	0.0185***	0.0037	-0.0098	0.0185***
	[0.0030]	[0.0066]	[0.0058]	[0.0060]	[0.0068]
Mean Dep Var	4.12	4.18	4.12	4.20	4.18
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Median Log-Wage					
Blue-Collar Representation	0.0056***	0.0127***	0.0038	-0.0086**	0.0119***
	[0.0020]	[0.0041]	[0.0043]	[0.0041]	[0.0042]
Mean Dep Var	4.50	4.57	4.48	4.59	4.57
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel C: Log-Wage 75th Percentile					
Blue-Collar Representation	0.0045***	0.0052	0.0040	-0.0106***	0.0049
	[0.0017]	[0.0032]	[0.0035]	[0.0036]	[0.0033]
Mean Dep Var	4.67	4.74	4.65	4.77	4.74
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Increase Council Share	.462	1	.465	1	1

Notes: The table presents estimates of the effect of blue-collar representation on wages. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance on the 10%, 5% and 1% significance level. Columns (1) and (2) display baseline results for the event-study and IV specification, respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) shows results for a difference-in-difference-type IV that estimates effects relative to four years prior to the event. Column (5) shows estimates for an intention-to-treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits. N Establishments in event-study specifications refers to treated establishments only.

Table 4: Heterogeneity in Treatment Effects — Turnover

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Establishment. Heterogeneity						Individual Heterogeneity		
	Majority $> .5$	First Blue-Collar	Large Firms	Manufacturing Sector	High Wage Gains of WC	Positive Wage Gains of WC	Age > 50	Educ high	Above Median individual AKM FE
Panel A: Involuntary Exits									
Effect of Blue-Collar Representation	-0.0076***	-0.0060*	-0.0084***	-0.0092***	-0.0076*	-0.0078*	-0.0075***	-0.0065*	-0.0017
	[0.0021]	[0.0025]	[0.0021]	[0.0023]	[0.0035]	[0.0035]	[0.0021]	[0.0027]	[0.0023]
Effect of Blue-Collar Representation x Hetero Var	-0.0002	-0.0024	0.0016	0.0022	0.0002	0.0005	0.0027	-0.0023	-0.0026**
	[0.0020]	[0.0019]	[0.0017]	[0.0018]	[0.0029]	[0.0027]	[0.0015]	[0.0013]	[0.0010]
Mean Dep Var	0.080	0.080	0.080	0.080	0.077	0.077	0.099	0.075	0.050
Mean Hetero Var	0.219	0.704	0.384	0.696	0.460	0.712	0.499	0.476	0.501
N Obs.	75120	75120	75120	75120	20686	20686	148364	137132	117773
N Estab.	2190	2190	2190	2190	573	573	2190	2190	1688
Panel B: Voluntary Exits									
Effect of Blue-Collar Representation	0.0011	0.0026*	0.0004	0.0007	0.0006	0.0002	0.0009	0.0003	0.0014
	[0.0008]	[0.0011]	[0.0008]	[0.0011]	[0.0012]	[0.0014]	[0.0007]	[0.0008]	[0.0008]
Effect of Blue-Collar Representation x Hetero Var	-0.0003	-0.0023*	0.0011	0.0004	-0.0008	-0.0000	-0.0004	0.0007	0.0004
	[0.0009]	[0.0010]	[0.0008]	[0.0009]	[0.0011]	[0.0011]	[0.0003]	[0.0005]	[0.0003]
Mean Dep Var	0.011	0.011	0.011	0.011	0.011	0.011	0.008	0.013	0.007
Mean Hetero Var	0.218	0.704	0.385	0.696	0.461	0.712	0.500	0.474	0.501
N Obs.	74160	74160	74160	74160	20429	20429	146548	134621	116496
N Estab.	2190	2190	2190	2190	573	573	2190	2190	1688
Panel C: Permanent Exits									
Effect of Blue-Collar Representation	-0.0021**	-0.0015	-0.0012	-0.0027**	-0.0020*	-0.0022*			
	[0.0006]	[0.0008]	[0.0008]	[0.0009]	[0.0009]	[0.0009]			
Effect of Blue-Collar Representation x Hetero Var	0.0002	-0.0008	-0.0018**†	0.0009	0.0003	0.0005			
	[0.0007]	[0.0007]	[0.0006]	[0.0007]	[0.0008]	[0.0005]			
Mean Dep Var	0.001	0.001	0.001	0.001	0.001	0.001			
Mean Hetero Var	0.219	0.704	0.384	0.696	0.460	0.712			
N Obs.	75120	75120	75120	75120	20686	20686			
N Estab.	2190	2190	2190	2190	573	573			

Notes: The table shows heterogeneity in treatment effects for turnover outcomes by establishment characteristics (Columns (1) - (6)) and by individual characteristics within establishment (Columns (7) - (9)). Column (1) shows heterogeneity by whether the event changes the majority in the council to a strict (above 0.5) majority for blue-collar worker, Column (2) by whether already at least one blue-collar worker was in the council before vs. cases where it is the first. Column (3) reports results for establishments below- vs. above median establishment size, Column (4) shows differences by manufacturing industry, Columns (5) and (6) look at heterogeneity in the wage gains of WC members based on the estimates in Section 5.5. Column (5) shows above vs. below median wage gains and Column (6) looks at positive vs. negative wage gains. Column (7) compares differences by individuals above vs. below age 50, Column (8) compares individuals with above vs. below high-school education and Column (9) compares individuals with above vs. below median individual AKM fixed effects in the within-establishment distribution. Asterisks denote significance levels at the 0.1, 0.05, and 0.01 level. † indicates significance at the 0.05 level when applying a Bonferroni correction for multiple hypothesis testing. N Establishments in event-study specifications refers to treated establishments only.

Table 5: Heterogeneity in Treatment Effects — Wages

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Establishment. Heterogeneity						Individual Heterogeneity		
	Majority $> .5$	First Blue-Collar	Large Firms	Manufacturing Sector	High Wage Gains of WC	Positive Wage Gains of WC	Age > 50	Educ high	Above Median individual AKM FE
Panel A: 10th Pctile Log Wages									
Effect of Blue-Collar Representation	0.0080*	0.0080	0.0045	-0.0053	0.0008	-0.0062	0.0046	0.0047	0.0026
	[0.0031]	[0.0048]	[0.0033]	[0.0048]	[0.0059]	[0.0084]	[0.0038]	[0.0039]	[0.0047]
Effect of Blue-Collar Representation x Hetero Var	-0.0012	-0.0004	0.0065	0.0182***†	0.0040	0.0121	0.0003*	0.0004	0.0006
	[0.0053]	[0.0049]	[0.0040]	[0.0047]	[0.0063]	[0.0083]	[0.0002]	[0.0009]	[0.0004]
Mean Dep Var	4.200	4.200	4.200	4.200	4.230	4.230	4.207	4.217	4.231
Mean Hetero Var	0.219	0.704	0.384	0.696	0.460	0.712	0.499	0.476	0.501
N Obs.	75120	75120	75120	75120	20686	20686	148364	137132	117773
N Estab.	2190	2190	2190	2190	573	573	2190	2190	1688
Panel B: Median Log Wages									
Effect of Blue-Collar Representation	0.0059**	0.0059*	0.0015	-0.0027	0.0046	-0.0000	0.0021	0.0022	0.0013
	[0.0021]	[0.0029]	[0.0022]	[0.0030]	[0.0035]	[0.0047]	[0.0031]	[0.0031]	[0.0038]
Effect of Blue-Collar Representation x Hetero Var	-0.0012	-0.0004	0.0082**†	0.0116***†	0.0008	0.0068	0.0003*	-0.0000	0.0007*
	[0.0034]	[0.0030]	[0.0025]	[0.0030]	[0.0046]	[0.0052]	[0.0002]	[0.0007]	[0.0003]
Mean Dep Var	4.563	4.563	4.563	4.563	4.578	4.578	4.509	4.517	4.539
Mean Hetero Var	0.219	0.704	0.384	0.696	0.460	0.712	0.499	0.476	0.501
N Obs.	75120	75120	75120	75120	20686	20686	148364	137132	117773
N Estab.	2190	2190	2190	2190	573	573	2190	2190	1688
Panel C: 75th Pctile Log Wages									
Effect of Blue-Collar Representation	0.0047**	0.0044	0.0011	-0.0001	0.0017	-0.0007	0.0009	0.0007	-0.0004
	[0.0017]	[0.0024]	[0.0019]	[0.0025]	[0.0034]	[0.0048]	[0.0030]	[0.0031]	[0.0037]
Effect of Blue-Collar Representation x Hetero Var	-0.0011	0.0001	0.0066**†	0.0064*	-0.0009	0.0028	0.0002	-0.0001	0.0006*
	[0.0029]	[0.0026]	[0.0023]	[0.0026]	[0.0042]	[0.0050]	[0.0001]	[0.0007]	[0.0003]
Mean Dep Var	4.726	4.726	4.726	4.726	4.735	4.735	4.674	4.682	4.707
Mean Hetero Var	0.219	0.704	0.384	0.696	0.460	0.712	0.499	0.476	0.501
N Obs.	75120	75120	75120	75120	20686	20686	148364	137132	117773
N Estab.	2190	2190	2190	2190	573	573	2190	2190	1688

Notes: The table shows heterogeneity in treatment effects for wage outcomes by establishment characteristics (Columns (1) - (6)) and by individual characteristics within establishment (Columns (7) - (9)). Column (1) shows heterogeneity by whether the event changes the majority in the council to a strict (above 0.5) majority for blue-collar worker, Column (2) by whether already at least one blue-collar worker was in the council before vs. cases where it is the first. Column (3) reports results for establishments below- vs. above median establishment-size, Column (4) shows differences by manufacturing industry, Columns (5) and (6) look at heterogeneity in the wage gains of WC members based on the estimates in Section 5.5. Column (5) shows above vs. below median wage gains and Column (6) looks at positive vs. negative wage gains. Column (7) compares differences by individuals above vs. below age 50, Column (8) compares individuals with above vs. below high-school education and Column (9) compares individuals with above vs. below median individual AKM fixed effects in the within-establishment distribution. Asterisks denote significance levels at the 0.1, 0.05, and 0.01 level. † indicates significance at the 0.05 level when applying a Bonferroni correction for multiple hypothesis testing. N Establishments in event-study specifications refers to treated establishments only.

Online Appendix of: Worker Representatives

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A Data and Sample Selection

A.1 IEB

We draw a sub-sample from the universe of employment relationships subject to social security contributions for the period 1975-2019. This sample includes the full history of all individuals working as a representative in some function ("Verbandsleiter, Funktionaer", Occupation Code *Klassifikation der Berufe* (KldB) 1988 = 763). For these histories, the sampled dataset also includes detailed information on their *co-worker* histories, including education, occupational classifications, gross labor income and (un-)employment spells.

The dataset is constructed in the following way: (1) We first determine all establishment-year cells with a *representative* (KldB 1988 = 763). We then determine the set of relevant *co-workers* using the full history of

representatives. This allows us to generate co-worker information for the full biography of representatives, for example for different establishments or years prior to works council membership.

(2) In a second step we generate biographical information for all representatives and co-workers, before reducing the dataset to a yearly panel of employment spells active on the 30th of June (a common cutoff date used in aggregated IAB data).

(3) Lastly, we collapse the co-worker information on the establishment-year level and keep observations of individuals observed in a works council at least once throughout their career. For example, this includes generating information on the individual wage rank, the number of employees working in different occupation groups or having attained different education levels in a given establishment and year.

A.2 SOEP

The Socio-Economic Panel (SOEP) is a representative annual household panel survey that has been running since 1984. In the most recent waves, about 15,000 households or 30,000 individuals are surveyed each year. We mostly utilize the "Core" dataset of the SOEP, which among other things contains answers from annual personal survey questionnaires. For details see Goebel et al. (2019).

To identify individual works council membership as well as the presence of a works council at the respondent's establishment, we use two questions from the personal questionnaire:

- "Are you a member of one of the following organisations or unions? — Works or staff council at your place of work?"
- "Does an employee's council exist at your place of work?"

The question on individual works council *membership* is surveyed in 2001, 2003, 2006, 2007, 2011, 2015, and 2019. The question on the *existence* of a works council at the current establishment is surveyed in 2001, 2006, 2011, 2016, and 2019.

To select consistent samples of employees and representatives, we restrict the sample to years in which both questions are surveyed (2001, 2006, 2011, and 2019) and restrict to cases where a works council at the current establishment exists. Additionally, we include the year 2015 and impute establishment-level works council existence.[1] Note that some outcomes are not surveyed every year so we resort to imputing outcomes from earlier years, see Section C.

We do not restrict the works council member sample any further, except for excluding individuals reporting to be civil servants, since the institutional setting is different in this case. For the sample of employees represented by the works council, we set the following restrictions: age 20-65, full-time or part-time employment, not in school, not self-employed, not a civil servant, not in non-employment or apprenticeship, not in a management position and with non-missing establishment size information.[2]

A.3 Metal Union (IGM) Data

The German Metal Union "IG Metall" publishes annual reports on the activities of the union and its covered establishments. These reports also cover information on council elections. In particular, it covers information on the workforce and the works council of establishments that are covered by a collective agreement. The IGM covers automobile-, steel-, IT and communication-, engineering-, metal and electronic-, railway-, and

[1] Imputing is conditional on not changing jobs and older information takes precedence (since establishing a works council is a higher probability event than disestablishing). For example, if someone reports to work at an establishment with a works council in 2011 and does not change jobs, we assume the existence of a council also in 2015. If the individual was not surveyed in 2011 or changed jobs, but has not changed jobs from 2015 to 2016, we will use the 2016 information.

[2] Restricting to non-missing establishment size categories is quantitatively inconsequential, affecting (¡ 1%) of all observations conditional on the other restrictions.

related sectors. The separate reporting of blue-collar versus white-collar workers stems from the fact that these groups (*Arbeiter* and *Angestellte* in German) historically had different collective bargaining agreements and also partly differing social security institutions.

B Measuring Representation

To study descriptive representation of workers and its evolution over time, we construct aggregate measures at the year level reflecting the universe of German establishments with a works council.

We first define employee representation at time t and establishment e by the mean difference of characteristic Y_{it} between works council members and employees:

$$\Delta\bar{Y}_{et} = \bar{Y}_{et}^{wc} - \bar{Y}_{et}^{emp} = \frac{1}{N_{et}^{wc}} \sum_{i:wc_i=1} Y_{iet} - \frac{1}{N_{et}^{emp}} \sum_{i:wc_i=0} Y_{iet}. \tag{1}$$

Thus, a positive $\Delta\bar{Y}_{et}$ implies over-representation along dimension Y (e.g., the share of individuals with characteristic Y is higher among works councilors than among employees if Y is binary), whereas a negative value corresponds to under-representation in the works council. We denote the number of employees and members of the works council in a given establishment by N_{et}^{emp} and N_{et}^{wc}, respectively.

To obtain a measure of aggregate representation, we then weight each establishment observation by its share in total employment (N_{et}^{emp}/N_{t}^{emp}):

$$\Delta\bar{Y}_{t} = \sum_{e} \Delta\bar{Y}_{et} \frac{N_{et}^{emp}}{N_{t}^{emp}}. \tag{2}$$

Establishment identifiers in the administrative IEB dataset allow us to observe $\Delta\bar{Y}_{et}$ at the establishment level. For the SOEP, however, we only observe a random sample from the German population without any detailed establishment information. To see how we can still construct a similar measure, note that our approach is equivalent to using observations at the level of works council members instead, where $\Delta\bar{Y}_{kt}$ is the difference between Y_{ket} of member k and mean employee characteristics, and subsequently aggregating using the share of total employment represented by member k as weights. Re-writing the expression in terms of a difference between works council member and employee gives:

$$\Delta\bar{Y}_{t} = \sum_{e} \sum_{i:wc_i=1} \frac{N_{et}^{emp}/N_{et}^{wc}}{N_{t}^{emp}} Y_{iet} - \frac{1}{N_{t}^{emp}} \sum_{e} \sum_{i:wc_i=0} Y_{iet}. \tag{3}$$

The second term, mean employee characteristics, can be computed using the SOEP sample. The first term is a weighted average of works council member characteristics where the weights are the share of all employees in the sample that are represented by a given works council member. These weights can in principle be derived from the size of each establishment because works council size is determined by law based on the number of employees. We use the unweighted works council means in our main specification for simplicity, though results are unaffected when using alternative specifications.

C SOEP Outcomes

Parental Education: Parental education (separately by father and mother) is surveyed in the biography questionnaire of the SOEP and recorded in 10 levels (0 Don't know, 1 Hauptschule, 2 Realschule, 3 Fachoberschule, 4 Abitur, 5 Other, 6 None, 8 Migrants: Mandatory Schooling, 9 Migrants: Further Education). We generate a dummy for whether the father has Abitur (category 4), but exclude individuals who don't recall their father's education level (category 0) or report another education level (category 5).

Own Education: We construct an education variable to resemble the educational classification in the

IEB using the ISCED97 classification (variable *pgisced97* in the SOEP-generated dataset *pgen*) as follows: *No vocational degree*: inadequate and general elementary education. *Vocational degree*: middle vocational, Abitur and vocational, as well as higher vocational education. *University degree*: all higher education.

Blue-Collar, Manual, Routine Occupations: See Section D.

Cognitive Skills: We use IQ short-scale tests conducted in 2006, 2012, and 2016. The module consists of two tests, a *fluency test* and a *symbol correspondence test* (Dohmen et al., 2010). In the fluency test, individuals have to name as many animals as possible in a 90 second intervals with measurements taken at 30, 60, and 90 seconds. In the symbol correspondence test individuals have to match as many numbers to symbols as possible in 90 seconds according to a known correspondence list. This short-scales have previously been found to be valid predictors of more comprehensive intelligence tests (see Dohmen et al. (2010) who briefly describe the relation to other tests). We follow prior practice in the literature and separately report the two tests, because the fluency test might be subject to measurement error (duplicate mentions), depend on language ability and might confound different concepts of intelligence (Heineck and Anger, 2010). For the measure, we use the correct answers in the symbol-correspondence test (90 seconds). We drop observations with likely invalid answers (the first wave in 2006 exhibits a lot of "0"s likely due to incorrect understanding of the exercise), standardize scores within waves and take averages for the few individuals with multiple test scores.

Wages: Wages are the self-reported current gross labor income referring to the previous month in the current job (variable *pglabgro* in the SOEP-generated dataset *pgen*). Respondents are asked to consider overtime payments but to exclude one-time payments. Item non-response is imputed by the SOEP using either longitudinal individual information or a wage regression. For details see the SOEP-Core pgen survey paper. Throughout the analysis we consider real labor income indexed to 2010 using the CPI.

Goals in Life: We use three of the irregularly occurring goal in life questions: (i) the importance of career success, (ii) the importance of being there for others, and (iii) the importance of social and political activism. All three variables are measured on a 4-point scale from (1) very important to (4) not important at all. For our sample, the goal in life questions are surveyed in 2004, 2008, 2010, 2012, 2016.

Political Interest: Interest in politics on a 1-4 scale (1 = very strong, 2 = strong, 3 = not so strong, 4 = none at all). Surveyed in all years since the beginning of the SOEP.

Political Preference - Right-Left: Self-reported position on a 0 (most left) to 10 scale (most right), surveyed in years 2005, 2009, 2014 and 2019.

Big Five: The Big Five dimensions are each surveyed by three facets. Questions are included in the years 2005, 2009, 2012, 2013, 2017 and 2019. The survey module reads as follows: *People can have many different qualities—some are listed below. You will probably find that some of these descriptions fit you completely and that some do not fit you at all. Others may fit to a certain extent. Please answer on a scale from 1 to 7, where 1 means "does not describe me at all", and 7 meaning "describes me perfectly".*

The descriptions given in the survey are (sorted by their Big Five dimension):

- *Extraversion*: Communicative/talkative. Outgoing/sociable. Reserved (negatively coded item).
- *Conscientiousness*: A thorough worker. Effective and efficient in completing tasks. Somewhat lazy (negatively coded item).
- *Openness*: I am original, someone who comes up with new ideas. Someone who values artistic, aesthetic experiences. Imaginative.
- *Agreeableness*: Sometimes a bit rude to others (negatively coded item). Forgiving. Considerate and kind to others.
- *Neuroticism*: A worrier. Nervous. Relaxed, able to deal with stress (negatively coded item).

All dimensions are constructed by adding up all three facets (reverting items if necessary). For openness we do not use the "curiosity" facet because it is not surveyed in all years.

Locus of Control: The locus of control measure is constructed from the following items:
The following statements describe different attitudes towards life and the future. To which degree do you personally agree with the individual statements? (7-step scale): (1) "How my life goes depends on me.", (2) "Compared to other people, I have not achieved what I deserve.", (3) "What a person achieves in life is above all a question of fate or luck.", (4) "I frequently have the experience that other people have a controlling influence over my life.", (5) "One has to work hard in order to succeed", (6) "If I run up against difficulties in life, I often doubt my own abilities.", (7) "The opportunities that I have in life are determined by the social conditions.", (8) "Inborn I have little control over the things that happen in my life."

We extract one factor using a principal component analysis and revert the factor such that a higher value represents a higher *internal* locus of control.

Tenure: Measured as the time with the same employer in years based on the start date with the current employer and the date of the interview (variable *pgerwzeit* in the SOEP-generated *pgen* dataset). Gaps in between employment spells at the same employer are not excluded. The variable is available for all survey years.

Unemployment experience: Total unemployment of the respondent up to the point of the interview measured in years (variable *pgexpue* in the SOEP-generated *pgen* dataset). The variable combines information from the 12-month calendar module surveying activities of respondents' throughout the last calendar year, as well as annual information from the biography questionnaire from individuals entering the SOEP. The variable is available for all survey years.

Worries: We focus on five worries: general economic development, personal economic situation, personal job security, devaluation of occupational skills and not keeping up with technological change. The first three topics are surveyed in every wave, while worries about the devaluation of skills and technological change are only added in the 2019 survey. Worries are reported on a three point scale: (1) great worries, (2) some worries, (3) no worries.

Job Satisfaction: Job satisfaction is surveyed each year (conditional on employment), using the question: "How satisfied are you today with the following areas of your life? - (if employed) With your job?" (answers on a 0-10 scale).

Occupational Expectations Next Two Years: Occupational expectations are surveyed for all employed individuals bi-annually from 1999-2009 as well as 2013, 2015 and 2018.[3] The survey question is: "How likely is it, that the following changes will occur within the next two years?". The changes in question are: Pro-actively looking for a new job, losing ones job, be promoted in the current establishment, becoming self-employed (if not already self-employed), change occupations, temporarily or permanently exit the workforce, worsening of the position in the current establishment, retire (if not already), change from part-time to full-time or vice-versa, participate in further training in the form of workshops/courses/seminars, and receive a salary increase beyond increases due to collective bargaining agreements.

Job Situation: All items are originally from the effort-reward imbalance module and surveyed in 2006, 2011, 2012 and 2016. Each questions asks whether individuals agree or disagree with a particular proposition about their job. Conditional on agreement (or disagreement for some items), individuals are asked how much stress results from this situation (none, mediocre, strong, or very strong). The propositions we focus on are

- Increasing time pressure: "The amount of work has increased steadily over the last two years."
- Interruptions at work: "I am often interrupted and distracted while working."

[3]Expectations have also been surveyed before but using a four-category scale instead of percentages. Because works council membership is only surveyed from 2001 onward we do not make use of this data.

- Promotion prospects: "The chances of promotion in my company are bad."
- Job at risk: "My job is in jeopardy."
- Recognition from superiors: "I receive the recognition I deserve from my superiors."
- Wage fair: "When I consider all my accomplishments and efforts, my pay seems appropriate."

C.1 Political Preferences

General Political Preferences *High Interest in Politics* is an indicator for reporting to be "strongly" or "very strongly" interested in politics, as opposed to "not at all" or "not so strongly". The question is surveyed every year. *Politically Right* is a self-reported placement on a left-right scale with 11 steps, starting from 0 "most left" to 10 "most right". The question is surveyed in 2005, 2009, 2014 and 2019. *Political Involvement: (Very) Important* is an indicator for reporting that political and social involvement is "important" or "very important", as opposed to "completely unimportant" or "less important". The question was surveyed in 1995, 2004, 2008, 2010, 2012, and 2016 and is part of the *Goals in Life* module. Variables for party preferences (*SPD, CDU/CSU, Greens, Linke, AfD, FDP*) are based on a question that asks individuals to which party they are leaning. Multiple answers are possible and we define indicators for listing any of the given parties among the preferred parties. The question is surveyed every year.

Preferences for Redistribution Survey items are drawn from the SOEP Innovation Sample module *umv*, fielded in 2014 and 2019. We focus on two questions that measure respondents' attitudes toward redistribution on a seven-point Likert scale ranging from 1 ("not at all") to 7 ("completely"). The first statement reads (own translation): "Individuals with a high income should pay higher taxes in the future." The second statement reads (own translation): "Individuals with a low income should receive more welfare benefits in the future." We construct a *Redistribution Index* by summing responses to the two items and standardizing the resulting measure to have mean zero and standard deviation of one in the population. The index is then reverse-coded so that higher values correspond to more right-leaning views.

Cultural Issues The cultural issue module is fielded in 2019 and asks individuals to indicate their level of agreement with a series of statements related to gender roles and migration. We construct the *Cultural Issues Index* by summing responses across all items and standardizing the resulting measure to have mean zero and standard deviation one. The index is then reverse-coded so that higher values correspond to more right-leaning views.

Influence on Public Decisions Respondents are asked to what extent (1 = Not at all, 7 = Completely) they have influence on public decisions at various levels. To construct the index we add up responses for all levels and standardize the resulting variable to have mean zero and variance one. The question is surveyed in 2019.

Political Inclusion As part of the SOEP Innovation Sample module *Actual Inequality, Perceived Inequality & Populism*, respondents were asked about their agreement with various statements related to populist tendencies. Part of these are the reported questions on political inclusion. The module was surveyed in 2019. We again construct a *Political Inclusion Index* by adding up responses to all items and standardizing to mean zero and variance one. A lower index corresponds to feeling less included.

C.2 Timing of SOEP Outcomes

Not all outcomes above are observed in the years in which works council membership is surveyed. When required, we impute SOEP outcomes *forward* in time and hold years in which works council membership is surveyed fixed (2001, 2006, 2011, 2015, 2019). For example, Big Five items are surveyed in 2005, so we use these values for the 2006 sample. The following table displays the timing of most relevant variables (excluding those annually surveyed).

SOEP Variable Availability

Variable	99	01	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
WC Member		✓				✓					✓				✓				✓
Goals in Life				✓				✓		✓		✓				✓			
Political Orientation					✓				✓					✓					✓
Big Five					✓				✓			✓	✓				✓		✓
Locus	✓				✓					✓					✓				
Occupational Expectations	✓	✓	✓		✓		✓		✓				✓		✓			✓	
Job Situation						✓					✓	✓				✓			
Politically Right					✓				✓					✓					✓
Redistribution (IS)														✓					✓
Cultural Issues																			✓
Political Inclusion (IS)																			✓

D Occupation Coding

D.1 Blue-Collar Definition

We define blue-collar workers based on a classification suggested by Blossfeld (1985) grouping occupations into 12 categories based on the 1988 3-digit KldB. To generate the Blossfeld classification, we use the same occupation information as for the task classification in both the IEB draw and the SOEP (see below).

We define the following groups as *blue-collar*: Occupations with mainly agricultural tasks; simple manual occupations (share of unqualified individuals $\geq$ 60%); qualified manual occupations (share of unqualified individuals at most 40%); simple service occupations; and technicians.

The following groups are defined as *white collar*: engineers; qualified service occupations; semi-professions (scientifically oriented service occupations); professions (highly-qualified service occupations); simple business and administrative occupations; qualified business and administrative occupations; managerial occupations.

Table A1 displays the largest 15 occupation groups separately by blue and white collar status using the SOEP data.

D.2 Complementary Task Classifications

Throughout the analysis, we use additional task-based occupation classifications following Dengler et al. (2014), who propose task measures based on an expert database used by the German Federal Employment Agency for career guidance and job placement. In particular, we use their 2011 version based on the 3-digit 1988 KldB occupation code. Note that for the IEB data, in 2011 notifications switch to the new 2010 KldB occupation code. For the years 2011 and later, we use the variable recoded to the KldB 1988 classification provided by the IAB.

Dengler et al. (2014) distinguish five tasks: manual routine, cognitive routine, analytical non-routine, interactive non-routine, and manual non-routine. Each occupation is assigned an estimated share of performed tasks falling into each of these five categories. We classify occupations as "manual", whenever their largest share of tasks is either manual routine or manual non-routine. We classify occupations as "routine", whenever their largest share of tasks is either cognitive routine or manual routine. The correlation between our blue-collar classification (including simple services) and the two classifications is 0.52 ("manual") and 0.16 ("routine") in our main SOEP sample.

E Model: Bribing Technology and Derivation of Comparative Statics

This appendix provides formal derivations for the firm's Stage 1 problem under specific functional forms for the bribing technology $g(q_0, x)$. Throughout, we maintain the assumptions of the main text: the revenue function is $f(L) = L^\beta$ with $0 < \beta < 1$, wages are determined by wage bargaining power p, and employment depends on employment bargaining power q.

E.1 Preliminaries

From the two-stage bargaining problem (Stages 2 and 3), equilibrium wages and employment are given by:

$$w^*(p) = \frac{b}{\beta}\big[\beta + (1-\beta)p\big], \tag{4}$$

$$L^*(p,q) = \left[\frac{\beta}{b} \cdot \frac{\beta + (1-\beta)q}{\beta + (1-\beta)p}\right]^{\frac{1}{1-\beta}}. \tag{5}$$

The firm's Stage 1 problem, conditional on initial bargaining power q_0, is:

$$\max_{x \geq 0} \ \Pi^0(x) = f(L^*(p, g(q_0, x))) - w^*(p)L^*(p, g(q_0, x)) - x.$$

Since $w^*(p)$ does not depend on q, the firm trades off the benefit of reducing employment via a lower q against the cost of the transfer x.

For expositional clarity, we specialize to $\beta = \frac{1}{2}$ in what follows, which delivers closed-form expressions while preserving the key comparative statics. With $\beta = \frac{1}{2}$, equilibrium wages simplify to $w^*(p) = b(1+p)$, and equilibrium employment is:

$$L^*(p,q) = \left(\frac{1+q}{2b(1+p)}\right)^2.$$

Substituting into profits yields the Stage 1 objective:

$$\Pi^0(x) = \frac{1 + g(q_0, x)}{2w^*} - w^*\left(\frac{1 + g(q_0, x)}{2w^*}\right)^2 - x. \tag{6}$$

E.2 Linear Bribing Technology

Assume the bribing technology is linear:

$$g(q_0, x) = q_0 - \alpha x, \qquad \alpha > 0.$$

Substituting into (6), the firm solves a strictly concave maximization problem. The first-order condition yields:

$$x^* = \begin{cases} \dfrac{\alpha q_0 - 2w^*}{\alpha^2}, & \text{if } \alpha q_0 > 2w^*, \\ 0, & \text{otherwise.} \end{cases}$$

The corresponding post-bribe bargaining power over employment is:

$$q^* = \begin{cases} \dfrac{2w^*}{\alpha}, & \text{if } \alpha q_0 > 2w^*, \\ q_0, & \text{otherwise.} \end{cases}$$

Two implications follow: (i) the optimal transfer x^* is increasing in q_0, and (ii) in the interior case, the firm fully offsets differences in q_0, yielding the same q^* regardless of representative type.

E.3 Multiplicative Convex Bribing Technology

Consider the bribing technology:

$$g(q_0, x) = \phi(x)\, q_0,$$

where $\phi : [0, \infty) \to [0, 1]$ satisfies $\phi(0) = 1$, $\phi'(x) < 0$, and $\phi''(x) > 0$.

The firm's first-order condition can be written implicitly as:

$$2w^* + \phi'(x)\phi(x)q_0^2 = 0.$$

Standard implicit function arguments yield the following result.

Lemma A.1 (Transfer comparative statics)**.** *Under the multiplicative convex bribing technology $g(q_0, x) = \phi(x)q_0$:*

$$\frac{\partial x^*}{\partial q_0} > 0 \qquad \textit{and} \qquad \frac{\partial x^*}{\partial w^*} < 0.$$

E.4 Post-Bribe Bargaining Power and Partial Offset

Since $q^* = q_0\phi(x^*)$, the effect of initial bargaining power on post-bribe bargaining power is:

$$\frac{\partial q^*}{\partial q_0} = \phi(x^*) + q_0\phi'(x^*)\frac{\partial x^*}{\partial q_0}.$$

Using the first-order condition, this derivative is positive if and only if:

$$\phi''(x)\phi(x) > \phi'(x)^2,$$

i.e., if ϕ is log-convex.

Lemma A.2 (Partial offset conditions)**.** *Under the multiplicative bribing technology:*

1. *If ϕ is log-linear (e.g., $\phi(x) = e^{-ax}$), the firm exactly offsets differences in q_0 and q^* is constant in q_0.*
2. *If ϕ is log-convex, the firm only partially offsets differences in q_0, so q^* is increasing in q_0.*
3. *If ϕ is log-concave, the firm may over-offset differences in q_0.*

E.5 Representative Income

The representative's income is $y_R = w^*(p) + x^*(q_0, w^*(p))$. Since $x^* > 0$ and $\partial x^*/\partial q_0 > 0$ (Lemma A.1), representatives earn more than non-represented workers, and blue-collar representatives (with higher q_0) experience larger income gains.

F Alternative Model: Agenda Setting

This appendix develops an alternative microfoundation for the blue-collar/white-collar outcome gap, in which representatives differ in the *order* of bargaining (the agenda) rather than in their bargaining *power*. We retain all primitives of the main Manning (1987) model: the production function $f(L) = L^\beta$ with $0 < \beta < 1$, the common outside option b, the utilitarian worker representative with utility $U(w, L) = L(w - b)$, and the firm with profit $\Pi(w, L) = f(L) - wL$. In contrast to the main version, the bargaining powers $(p, q) \in (0, 1)^2$ over wages and employment are now *the same* across types, while the order of the bargaining stages differs.

This alternative modeling route is motivated by the role of agenda setting in bargaining models (see, e.g., Plott and Levine, 1978; Fershtman, 1990; Inderst, 2000) combined with the German institutional setting which gives the works council chair the right to set the agenda (*Tagesordnung*) and to lead bargaining rounds.[4] In addition, we posit that blue-collar works councilors themselves place greater weight on employment and thus credibly insist on bargaining over employment first, whereas white-collar representatives will prefer bargaining over wages first (as in the main model):

- **Blue-collar**: Stage 2 = Nash bargaining over L (power q); Stage 3 = Nash bargaining over w (power p).
- **White-collar**: Stage 2 = Nash bargaining over w (power p); Stage 3 = Nash bargaining over L (power q).

The firm's Stage 1 bribing problem now allows the firm to reduce *both* bargaining-power parameters via separate transfers $(x_p, x_q) \geq 0$, using a common symmetric bribing technology ("equal footing").

F.1 No-Bribe Equilibrium

We first consider the agenda model without bribing. For notational convenience, define $u \equiv \beta + (1-\beta)p$ and $v \equiv \beta + (1-\beta)q$.

Blue-collar subgame (employment first, wage second). By backward induction, the Stage-3 wage bargain over w, conditional on the Stage-2 employment L, solves $\max_w p \log[L(w-b)] + (1-p)\log[f(L) - wL]$, yielding

$$w(L) = p\,L^{\beta-1} + (1-p)b, \qquad L(w-b) = p\,S(L), \qquad f(L) - wL = (1-p)\,S(L), \tag{7}$$

where $S(L) \equiv f(L) - bL$ is total surplus. Both rents are proportional to $S(L)$ with fixed shares $(p, 1-p)$. The Stage-2 bargain over L therefore reduces to the surplus-maximization problem $\max_L S(L)$, with first-order condition $f'(L) = b$ and solution

$$L^*_{blue} = \left(\frac{\beta}{b}\right)^{\frac{1}{1-\beta}} \equiv L^*_{ef}, \qquad w^*_{blue}(p) = \frac{b}{\beta}u. \tag{8}$$

Equilibrium employment under a blue-collar representative is at the first-best (efficient) level, independent of (p, q), because the parties anticipate they will split surplus in fixed shares regardless of L and therefore have a common interest in maximizing the surplus pie at the employment stage.

White-collar subgame (wage first, employment second). Similar arguments as those for the original protocol in Section 4 yield

$$w^*_{white}(p) = \frac{b}{\beta}u, \qquad L^*_{white}(p, q) = \left[\frac{\beta}{b} \cdot \frac{v}{u}\right]^{\frac{1}{1-\beta}} = L^*_{ef}\left(\frac{v}{u}\right)^{\frac{1}{1-\beta}}. \tag{9}$$

Equilibrium employment under a white-collar representative lies on the contract curve indexed by q; it equals the efficient level iff $p = q$.

[4] According to the Works Constitution Act (*Betriebsverfassungsgesetz*), the chair of the works council has the right set the agenda of the works council and to lead negotiations (§29 (2) *BetrVG*).

Comparison without bribing. Combining (8) and (9):

Lemma A.3 (Outcomes by agenda, no bribing)**.** *Holding (p, q) common across types and ignoring bribing:*

(a) Wages are identical: $w^*_{blue}(p) = w^*_{white}(p) = (b/\beta)u$.
(b) $L^*_{blue} \gtreqless L^*_{white}$ iff $p \gtreqless q$. Equivalently, $L^*_{blue} > L^*_{white}$ whenever the common wage-bargaining power exceeds the common employment-bargaining power, so that equilibrium employment under a white-collar representative falls below the efficient level that the blue-collar agenda achieves by procedural commitment.

Lemma A.3(a) matches the empirical finding of no wage effect of representative type. Part (b) matches the empirical employment finding under the parametric assumption $p > q$; substantively, the agenda model attributes the employment advantage under blue-collar representation to blue-collar representatives' procedural commitment to employment-first bargaining, not to heterogeneous bargaining strengths. We caution, however, that $p > q$ may not be a convincing assumption for works councilors, who arguably have stronger bargaining power over employment. That being said, including a bribing stage in the model, restores the prediction of higher employment under blue-collar representatives as outlined below.

F.2 Bribing in the Agenda Setting Model

We now add a Stage 1 in which the firm can transfer $(x_p, x_q) \geq 0$ to the representative. The post-bribe bargaining powers are

$$p = \phi(x_p)\, p_0, \qquad q = \phi(x_q)\, q_0,$$

with $\phi : [0, \infty) \to [0, 1]$, $\phi(0) = 1$, $\phi' < 0$, $\phi'' > 0$, and the *same* ϕ on both margins ("equal footing"). The firm's cost is $x_p + x_q$ and the representative's income is $y_R = w^* + x_p + x_q$. Define

$$K \equiv S(L^*_{ef}) = (1 - \beta) \left(\frac{\beta}{b}\right)^{\frac{\beta}{1-\beta}}.$$

Direct substitution into (8) and (9) yields the reduced-form profits

$$\Pi^*_{blue}(p) = K(1 - p), \qquad \Pi^*_{white}(p, q) = K(1 - q)\Big(\frac{v}{u}\Big)^{\frac{\beta}{1-\beta}}. \tag{10}$$

Blue-collar: only the wage margin has bite. Since Π^*_{blue} in (10) is independent of q, the firm's objective $K(1 - \phi(x_p)p_0) - x_p - x_q$ is strictly decreasing in x_q, so

$$x^*_{q,blue} = 0.$$

Bribing q is wasteful for blue-collar because employment is at the efficient level regardless of q. The first-order condition for x_p is

$$-\phi'(x^*_{p,blue})\, K\, p_0 = 1, \tag{11}$$

with interior solution $x^*_{p,blue} > 0$ whenever $-Kp_0\phi'(0) > 1$. By the implicit function theorem and $\phi'' > 0$, $\partial x^*_{p,blue}/\partial p_0 > 0$ and $\partial x^*_{p,blue}/\partial K > 0$.

Lemma A.4 (Blue-collar bribing on equal footing)**.** *For blue-collar, the firm's optimal bribing strategy targets only the wage parameter: $x^*_{q,blue} = 0$ and $x^*_{p,blue} > 0$ under standard interior conditions. Post-bribe employment remains at the efficient level L^*_{ef}.*

White-collar: both margins have bite. From (10),

$$\frac{\partial \Pi^*_{white}}{\partial p} = -K(1 - q)\Big(\frac{v}{u}\Big)^{\frac{\beta}{1-\beta}} \frac{\beta}{u} < 0, \qquad \frac{\partial \Pi^*_{white}}{\partial q} = -K\Big(\frac{v}{u}\Big)^{\frac{\beta}{1-\beta}} \frac{q}{v} < 0.$$

Bribing on both margins can hence increase firm rents: reducing p lowers the wage bill, and reducing q pulls the contract-curve employment toward the firm's preferred level. With $\tilde{p} = \phi(x^*_{p,white})p_0$, $\tilde{q} = \phi(x^*_{q,white})q_0$, $\tilde{u} = \beta + (1-\beta)\tilde{p}$, $\tilde{v} = \beta + (1-\beta)\tilde{q}$, the interior FOCs are

$$-\phi'(x^*_{p,white})\, Kp_0(1-\tilde{q})\left(\frac{\tilde{v}}{\tilde{u}}\right)^{\frac{\beta}{1-\beta}} \frac{\beta}{\tilde{u}} = 1, \tag{12}$$

$$-\phi'(x^*_{q,white})\, Kq_0\left(\frac{\tilde{v}}{\tilde{u}}\right)^{\frac{\beta}{1-\beta}} \frac{\tilde{q}}{\tilde{v}} = 1. \tag{13}$$

Lemma A.5 (White-collar bribing on equal footing)**.** *For white-collar, both bribing margins are exploited at the interior optimum: $x^*_{p,white} > 0$ and $x^*_{q,white} > 0$.*

F.3 Comparison of Bribes and Predictions

Evaluating marginal benefits at the no-bribe point $(x_p, x_q) = (0,0)$ with $p_0 = q_0 \equiv \pi$ (so $u_0 = v_0$):

$$\begin{aligned} &\text{blue-collar, } p \text{ margin: } K(-\phi'(0))\pi, \\ &\text{white-collar, } p \text{ margin: } K(-\phi'(0))\pi \cdot \frac{(1-\pi)\beta}{u_0}, \\ &\text{white-collar, } q \text{ margin: } K(-\phi'(0))\pi \cdot \frac{\pi}{u_0}. \end{aligned}$$

Summing white-collar's two margins,

$$K(-\phi'(0))\pi \cdot \frac{(1-\pi)\beta + \pi}{u_0} = K(-\phi'(0))\pi \cdot \frac{u_0}{u_0} = K(-\phi'(0))\pi,$$

which equals the blue-collar marginal value. The first-dollar incentive to bribe is thus equal across types with only the allocation of bribes differing.

Lemma A.6 (Bribe comparison at $p_0 = q_0$)**.** *Under the symmetric multiplicative bribing technology with common $p_0 = q_0 \equiv \pi$:*

(a) The total marginal benefit of bribery at $(x_p, x_q) = (0,0)$ is identical across types.
(b) Bribery of blue-collar representatives is concentrated on the wage margin p; that of white-collar representatives is split between p and q.
(c) Comparing (11) with (12) at $p_0 = q_0$ yields $x^*_{p,blue} > x^*_{p,white}$: blue-collar's wage parameter is bribed down more aggressively than white-collar's, because all bribery of blue-collar representatives is directed at p.
(d) The total bribes $x^*_{blue} = x^*_{p,blue}$ and $x^*_{white} = x^*_{p,white} + x^*_{q,white}$ cannot be ranked without further restrictions on ϕ.

Implications for outcomes. Combining the bribery analysis with the no-bribe equilibrium:

- **Wages.** Both w^*_{blue} and w^*_{white} fall relative to the no-bribe wage $(b/\beta)[\beta + (1-\beta)p_0]$. By Lemma A.6(c), $\tilde{p}_E < \tilde{p}_W$ (where subscripts E, W denote the employment-first and wage-first equilibria), so $w^*_{blue} < w^*_{white}$ post-bribe. The agenda model with equal-footing bribery predicts a post-bribe wage *discount* under blue-collar representatives.
- **Employment.** Equilibrium employment under a blue-collar representative remains at L^*_{ef} regardless of bribing (Lemma A.4). Equilibrium employment under a white-collar representative is $L^*_{white}(\tilde{p}_W, \tilde{q}_W)$ and $L^*_{blue} > L^*_{white}$ whenever $\tilde{q}_W < \tilde{p}_W$. Starting out from equal bargaining powers $p_0 = q_0 = \pi$, this is

the case when the marginal benefit of bribing down q at $(x_p, x_q) = (0, 0)$ is larger:

$$\frac{\pi}{u_0}\frac{u_0}{(1-\pi)\beta} > 1 \iff \pi > \frac{\beta}{1+\beta}$$

That is, when the initial bargaining power is large enough, close to the no-bribe solution $(x_p, x_q) = (0, 0)$ we expect bribing to be directed towards the employment-margin for white-collar representatives. In this case, the post-bribe agenda model matches the empirical finding that blue-collar representation raises employment.

- **Representative income.** $y_{R,blue} = w^*_{blue} + x^*_{p,blue}$ versus $y_{R,white} = w^*_{white} + x^*_{p,white} + x^*_{q,white}$. The empirical ordering $y_{R,blue} > y_{R,white}$ does not follow automatically from the agenda model with equal-footing bribery: it requires either an *asymmetric* bribing technology that makes bribing down bargaining over wages relatively cheaper (so the firm tilts even more toward p, where blue-collar has its only useful channel), or a hybrid in which blue-collar representatives also enter with a higher p_0. By contrast, the baseline model in Section E delivers $y_{R,blue} > y_{R,white}$ from $q_{0,blue} > q_{0,white}$ together with log-convexity of ϕ.

Comparison with the baseline. The agenda alternative reproduces the baseline model's main qualitative predictions on wages and employment through a different primitive heterogeneity: the procedural order in which blue-collar vs. white-collar representatives bargain, rather than differential bargaining strength on the employment margin. The distinctive feature of the agenda model is that equilibrium employment under a blue-collar representative is at the *first-best* level—and therefore immune to bribery effort. On the representative-income margin, equal-footing bribery does not automatically generate $y_{R,blue} > y_{R,white}$; restoring this prediction requires an asymmetric technology or hybridization with the baseline assumption $q_{0,blue} > q_{0,white}$. The exercise thus isolates the role of the baseline's Δq_0 assumption in delivering the representative-income ordering, while showing that the wage and employment predictions are robust to a procedural reinterpretation.

G Alternative Model: Changes in Outside Options

As another modeling alternative, we explore implications of representative types differing directly in terms of the outside option $b(t)$, with blue-collar workers standing to lose more from job loss: $b_{blue} < b_{white}$.

Since the equilibrium wage is increasing in b and employment is decreasing in b, it follows immediately that $w^*_{blue} < w^*_{white}$ and $L^*_{blue} > L^*_{white}$. Intuitively, Nash bargaining yields wages that are increasing in the outside option, so blue-collar workers deliver weaker wages which allows employers to hire a larger workforce.

For the representative's compensation, both w^* and x^* now vary with type:

$$\frac{\partial y_R}{\partial b} = \frac{\partial x^*}{\partial b} + \frac{\partial w^*}{\partial b} = \left(1 + \frac{\partial x^*}{\partial w^*}\right)\frac{\partial w^*}{\partial b}.$$

While $\frac{\partial w^*}{\partial b} > 0$, the term $1 + \frac{\partial x^*}{\partial w^*}$ cannot be signed without further restrictions. Blue-collar representatives have higher total compensation than white-collar representatives if and only if bribing is sufficiently costly (i.e., $\frac{\partial x^*}{\partial w^*} < -1$). Otherwise, the prediction is ambiguous.

We derive conditions under which $\frac{\partial x^*}{\partial w^*} < -1$ holds when specializing to $\beta = \frac{1}{2}$.

Linear case. From the interior solution $x^* = (\alpha q_0 - 2w^*)/\alpha^2$:

$$\frac{\partial x^*}{\partial w^*} = -\frac{2}{\alpha^2} < -1 \iff \alpha < \sqrt{2}.$$

Multiplicative case. From the first-order condition and the implicit function theorem:

$$\frac{\partial x^*}{\partial w^*} = -\frac{2}{q_0^2[\phi''(x)\phi(x) + \phi'(x)^2]} < -1 \iff \phi''(x)\phi(x) + \phi'(x)^2 < \frac{2}{q_0^2}.$$

In both cases, blue-collar representatives have higher compensation only when bribery is sufficiently costly: low α in the linear case (bribes do not buy large reductions in q), or an insufficiently steep ϕ in the multiplicative case.

H Complier Analysis

Approach Extending complier analysis beyond the standard binary-treatment binary-instrument framework is not straightforward and remains an active area of research. For example, with multi-valued instrument (e.g. assignment to different treatment intensities), individuals might comply with some assignments but not others.[5]

Our complier analysis is based on a simpler version of the IV analysis that (a) codes the treatment and instrument into three discrete values and (b) separately estimates the model for many year-to-year differences.

Recall that the second-stage for our main IV analysis is given by

$$Y_{eg,t+4} = \alpha + \beta \widehat{swc}_{e,t}^{blue} + \theta_{eg} + \eta_{tg} + \varepsilon_{egt}.$$

Instead we consider the following simplified version separately for every two years $t, t-1$:

$$\Delta y_e = \alpha + \beta D_e + \varepsilon_e \tag{14}$$
$$D_e = \gamma + \delta Z_e + \nu_e \tag{15}$$

Here, Δy_e is the change in the outcome y for establishment e between years $t-1$ and t. D is the change in the observed blue-collar share on the works council (the treatment) and Z is corresponding predicted change using retirements (the instrument). We discretize both D and Z into three ordered categories $\{0, 1, 2\}$ corresponding to a decrease, no change, or an increase in the (predicted) share, respectively. In the following, we denote by $D(z_j)$ the potential treatment level corresponding to instrument value z_j.

The idea is to provide a characterization of the 2SLS estimand in this simplified model on which we can base our complier analysis. In particular, for this model, we can rely on the framework in Angrist and Imbens (1995) that characterizes the interpretation of the 2SLS estimand for the case of a (cardinal) multi-valued treatment and instrument.

The key assumption is an *extended monotonicity condition*. Formally, we require $P(D(2) \geq D(1)) = 1$ and $P(D(1) \geq D(0)) = 1$. In our context this means, that the (hypothetical) actual change is weakly increasing in the predicted change for all establishments. This rules out establishments with behavior like $D(0) = 2, D(1) = 1, D(2) = 0$: When a decrease is predicted they increase the share, while a predicted increase results in a decrease.

2SLS Estimand Decomposition Under usual IV assumptions, a combination of Theorems 1 and 2 in Angrist and Imbens (1995) then delivers a decomposition of the 2SLS estimand into convex combinations of "complier" subgroups. Formally, we have for β in the simplified models:

$$\beta = \sum_{k=1}^{2} \mu_{k,k-1} \sum_{j=1}^{2} \omega_{j,k,k-1} E[Y(d_j) - Y(d_{j-1}) | D(k) \geq j > D(k-1)]$$

where μ and ω are some identified non-negative weights summing up to one. This is in spirit similar to the result that β in a binary-binary case is the local average treatment effect for compliers. The group $D(k) \geq j > D(k-1)$ includes all establishments, which get pushed beyond treatment threshold j by receiving instrument k compared to $k-1$.

[5] With D, Z each taking on three values, we get $3^3 = 27$ instead of the usual 4 choice groups characterize hypothetical treatment choice for each instrument level.

Following the decomposition, "complier" characteristics corresponding to the 2SLS estimand are

$$E[X|\text{"complier"}] = \sum_{k=1}^{K} \mu_{k,k-1} \sum_{j=1}^{J} \omega_{j,k,k-1} E[X|D(k) \geq j > D(k-1)].$$

Identification of these moments follows from standard arguments under the extended monotonicity condition. This is again similar in spirit to identifying various features of the complier distribution in the binary-binary setting (e.g. see Abadie (2003)). We then estimate these moments based on sample analogues for each $t, t-1$ combination and take an average over all resulting point estimates weighted by the number of observations for each year t to arrive at our final "complier" characteristics.

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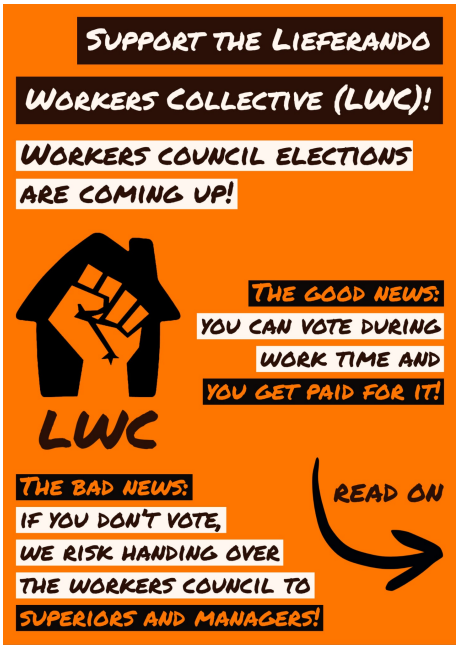
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I Appendix Figures and Tables

Figure A1: Works Council Elections: Examples of Protests and Election Campaigns at Food Delivery Firm



(a) Food Delivery Driver and Rider Protest (January 2022)



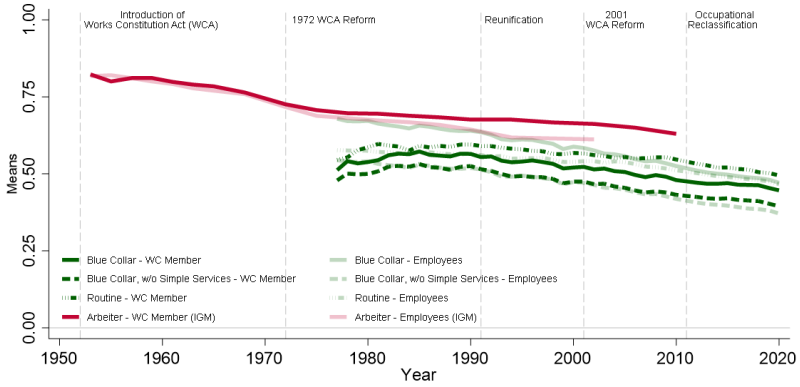
(b) Campaign Flyer By Lieferando Workers Collective



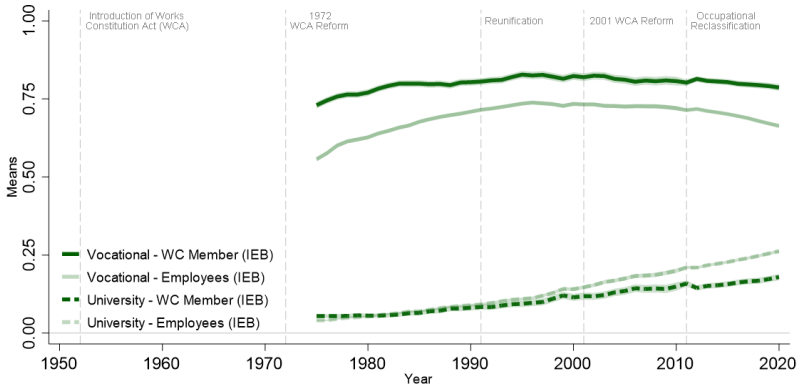
(c) Campaign Flyer By DGB Member Union

Notes: The figure provides examples of campaigns during the lead-up to the 2022 works council elections. Subfigure (a) shows a protest by drivers and riders for a food delivery firm and illustrates demands in response to the dismissal of a rider (Source: picture alliance/dpa/dpa-Zentralbild — Jan Woitas). Panels (b) and (c) show campaign flyers for the 2022 works council election at a food delivery firm, with Subfigure (b) showing a flyer by the Lieferando Workers Collective and) a flyer by Liefern am Limit, a union associated with the German Trade Union Federation (DGB) (see sources here and here, last accessed June 2026).

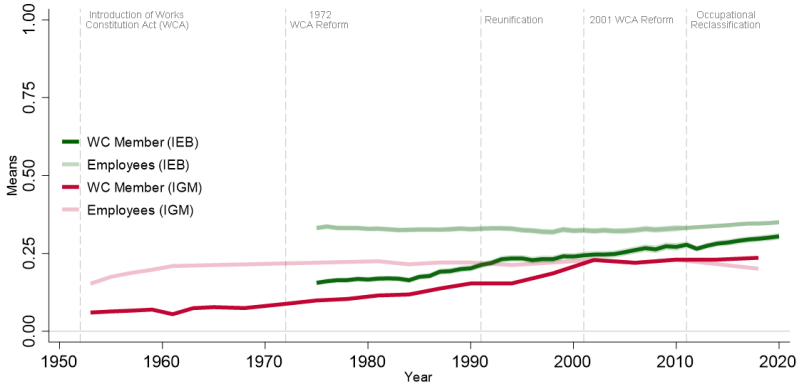
Figure A2: Representatives vs. Employees – Levels in Occupation Groups, Education, and Gender



(a) Occupation Groups (IEB, IGM)



(b) Vocational or University Degree

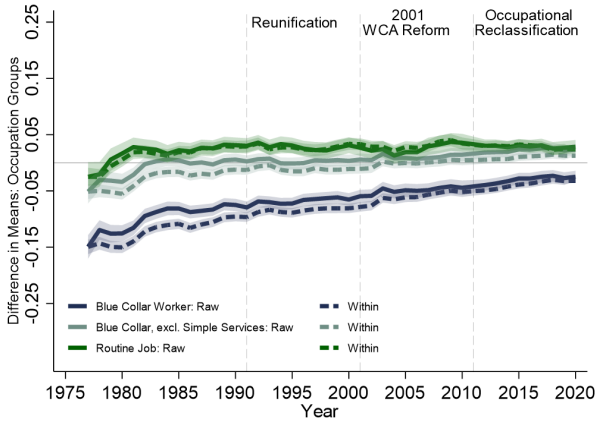


(c) Female

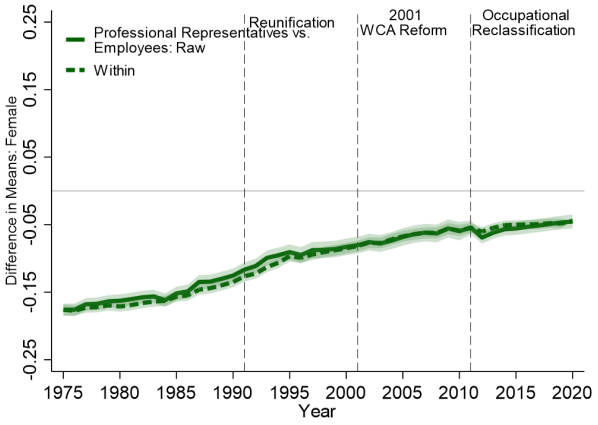
This figure shows the evolution of occupation groups, education, and gender for works council members and the employees they represent in establishments with works councils. Shaded regions are 95% confidence intervals. We plot time series for two different samples: the administrative sample from the IEB (including professional works councilors) and the SOEP household panel (including all works council member). The IEB time series is weighted by establishment size, while the SOEP time series gives equal weight to each surveyed individual. We correct the IEB time series for a break in 2011 due to the Occupational Reclassification by estimating a RD model with a second order polynomial and adding the estimated discontinuity to the *pre 2011* time series.

Figure A3: Raw vs. Within Establishment Trends in Representation Gaps

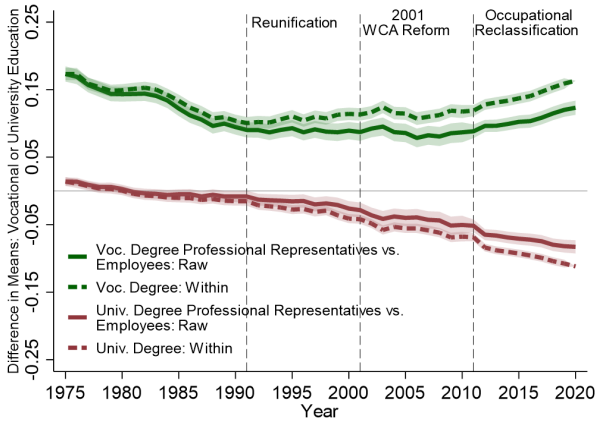
(a) Occupations



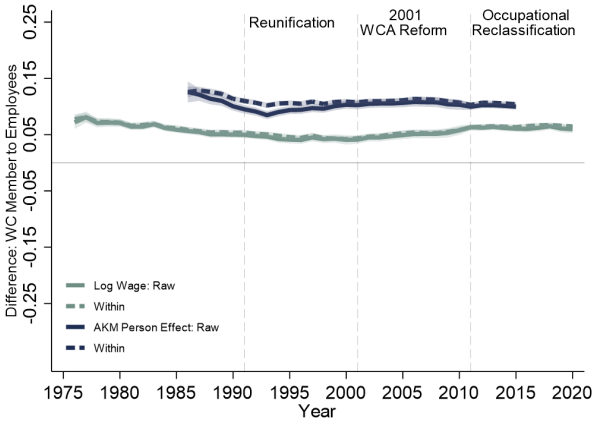
(b) Female



(c) Vocational or University Education



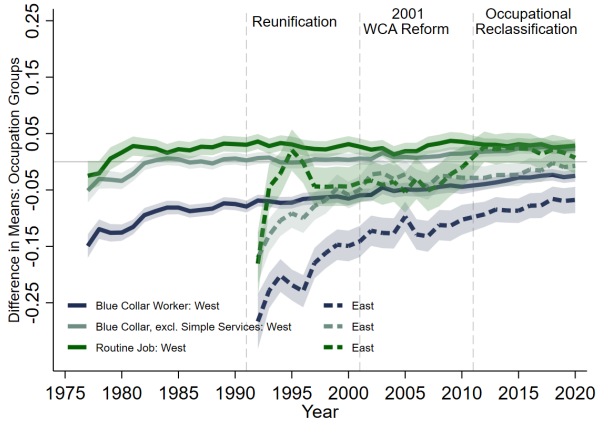
(d) Log Wages and AKM Person Effects



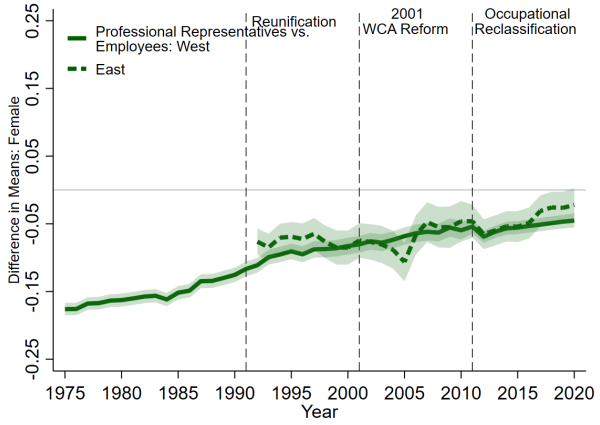
Notes: This figure compares the overall trend in representation gaps with the trend in the within-establishment gaps. The latter is obtained by regressing the establishment-year level gaps on a full set of year indicators and controlling for establishment fixed effects. We plot the resulting year dummies with the first year normalized to the raw time series. For details on variable construction see text and main figures.

Figure A4: East vs. West Germany

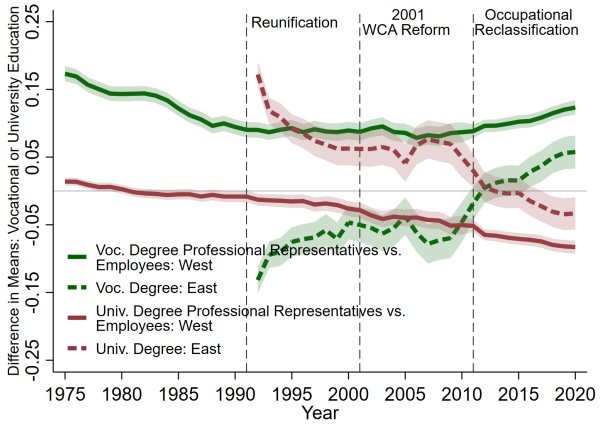
(a) Occupations



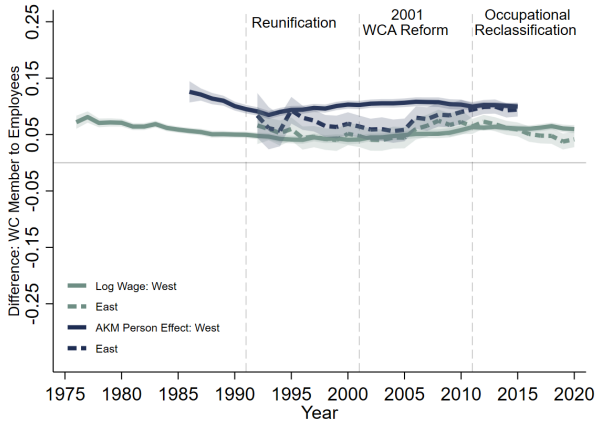
(b) Female



(c) Vocational or University Education

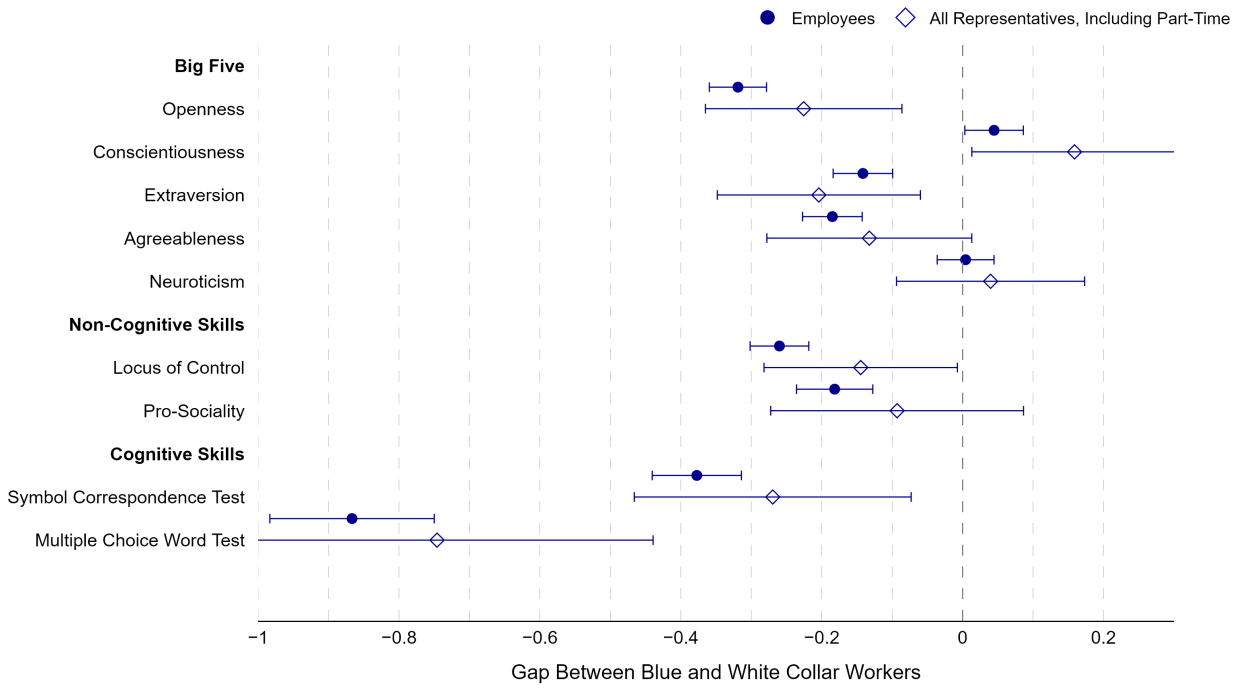


(d) Log Wages and AKM Person Effect



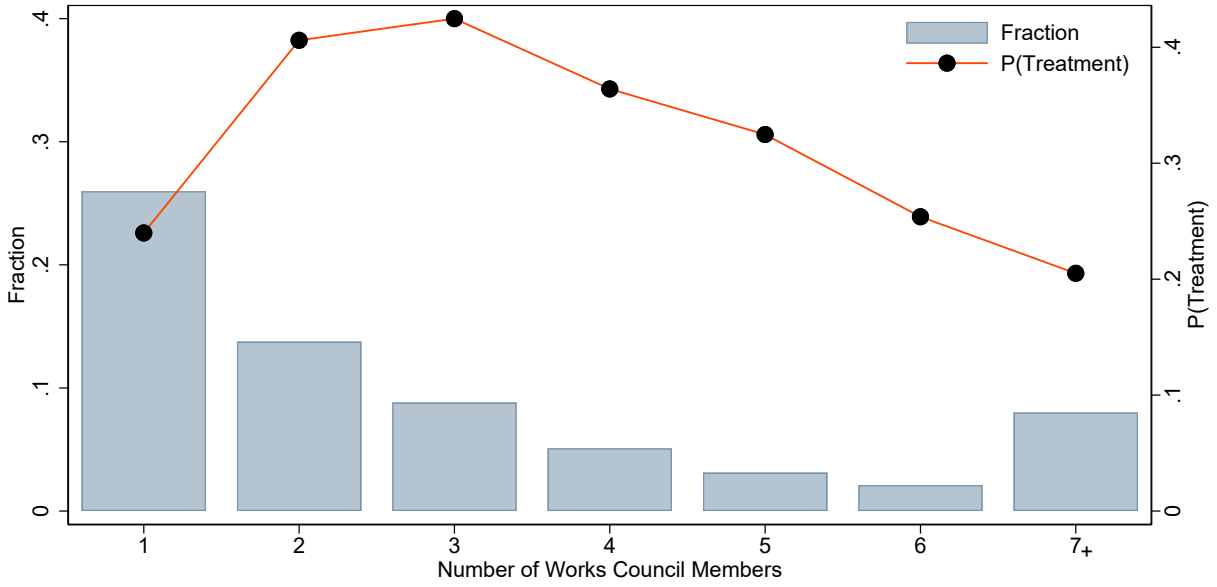
Notes: This figure compares the trend in representation gaps between West Germany (the baseline sample) and East Germany for which data is available since 1992.

Figure A5: SOEP – Character and Ability Differences Blue- vs. White-Collar

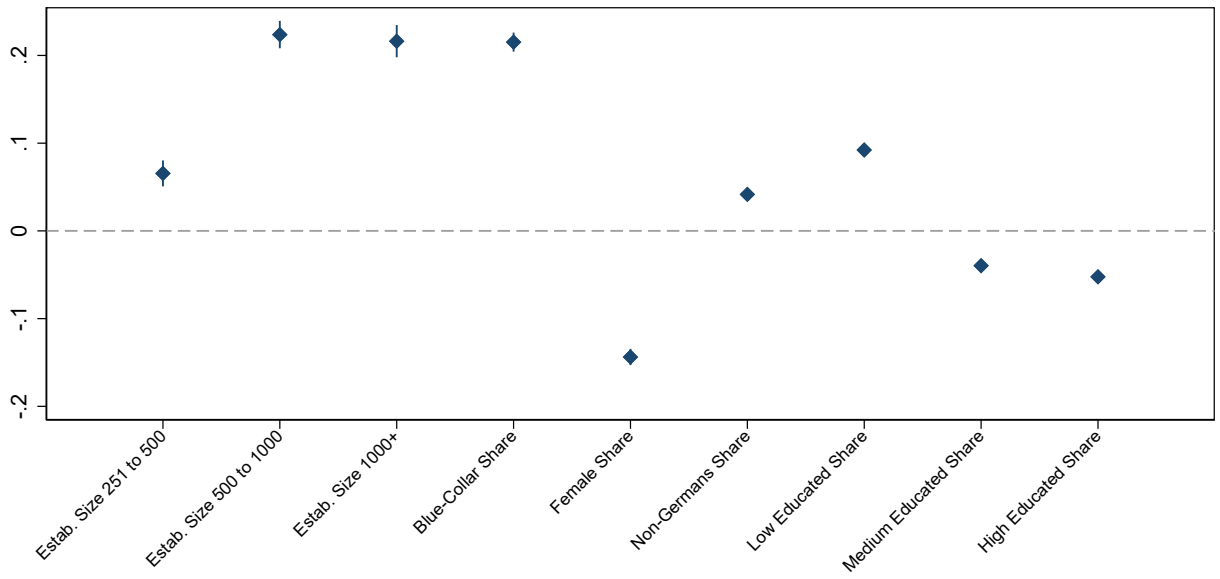


Notes: This figure plots differences in mean characteristics for the Big Five character traits, and different measures of cognitive and non-cognitive ability between blue- and white-collar workers. We separately show differences between the regular work force (those not in a works council) and works council members. Sample restrictions and variable definitions are similar to the main specifications reported in the paper. All outcomes are standardized with respect to the regular employee mean and standard deviation. Pro-sociality is the first principal component of three variables: general trust, caring for others, and positive reciprocity. For details on the variables see Appendix Section C.

Figure A6: Treatment Selection – Event Study



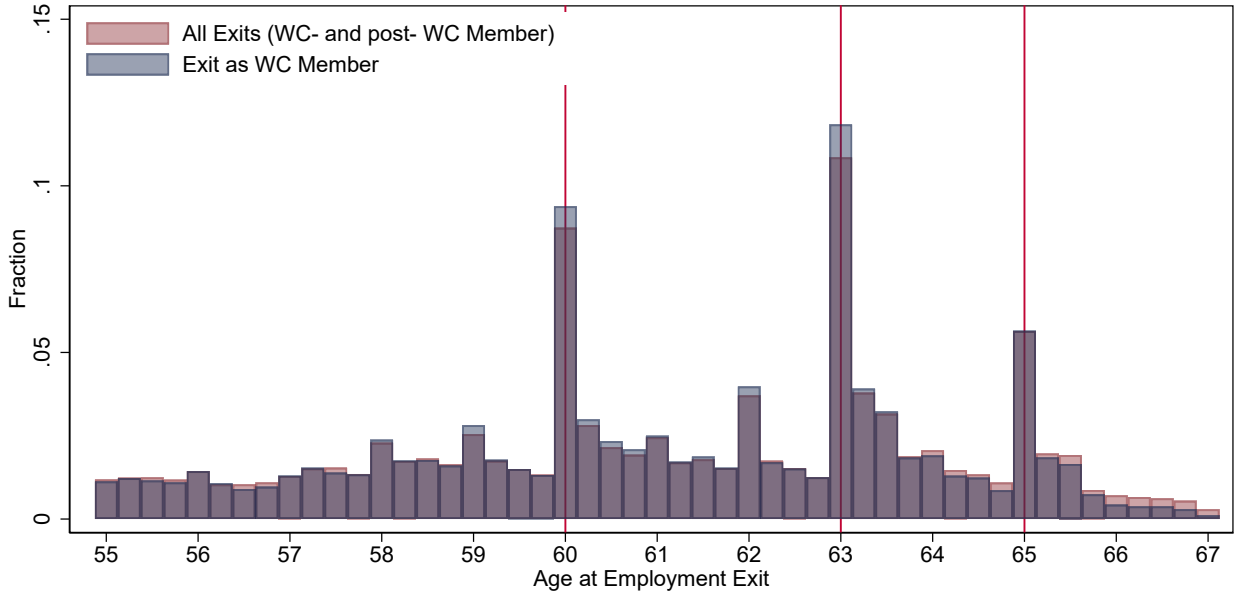
(a) Works Council Size and Treatment Probability



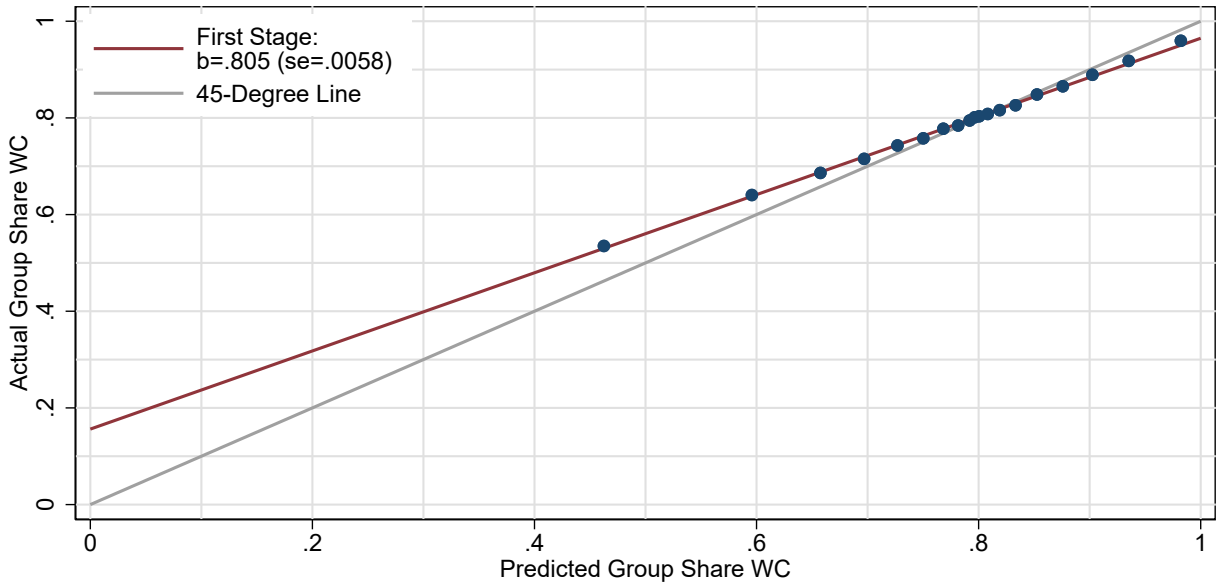
(b) Difference in Firm Characteristics: Treated vs. Non-Treated

Notes: Figure (a) shows how the probability of an establishment ever being treated varies with the size of the works council and the underlying frequency of works council size for all firms with a works council. Results are weighted by workforce size, and capped at the 90th percentile of the works council size. Figure (b) shows differences in firm characteristics by treated vs. all (matched and non-matched) firms.

Figure A7: Retirement IV – Excess-Exits and First Stage



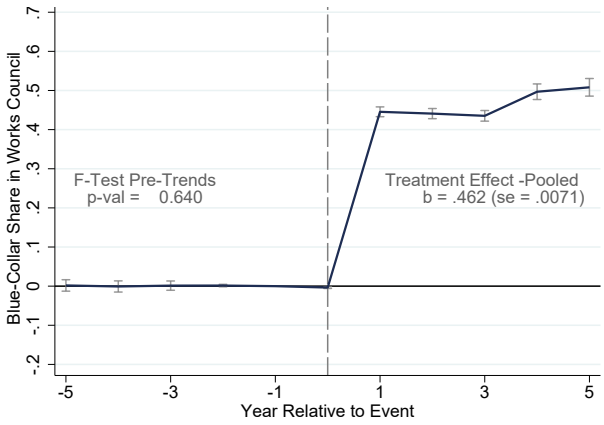
(a) Excess Exits at Common Retirement Ages



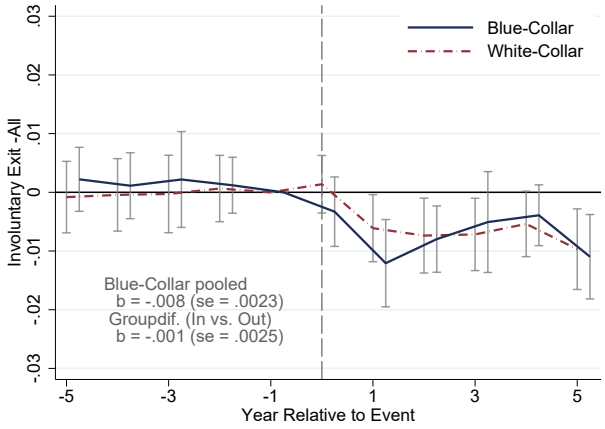
(b) First Stage of Group Representation: Imputed Observed and Predicted Works Council Share

Notes: Subfigure (a) shows the distribution of the employment exit age (the age at the last observed employment spell) for professional works council members separately for whether they are a professional member at their last job, vs. all exits of individuals ever classified as professional councilors. Vertical lines at 60, 63 and 65 indicate common retirement ages (Seibold, 2021). Subfigure (b) displays the first stage binned scatter plots from regressing the observed group-share on the expected (exit-induced) group-share, controlling for establishment and year FE. First stage-coefficients and standard errors, clustered at the establishment level, are reported in the legend. Displayed figures are conditional on the instrument being non-zero. The corresponding 2nd-Stage IV estimates are displayed in Table 2 and 3.

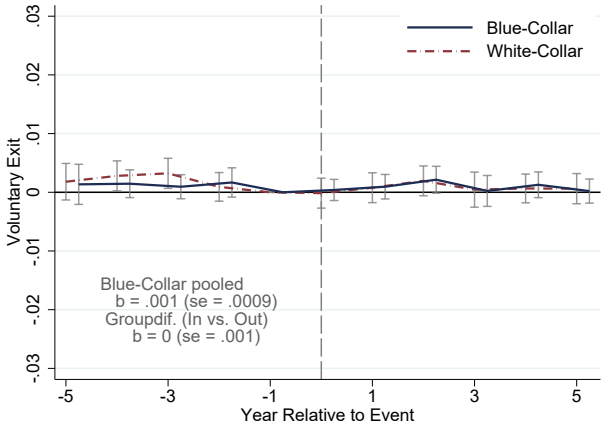
Figure A8: Event Study Estimates Turnover – Separately for Blue- and White Collar Worker



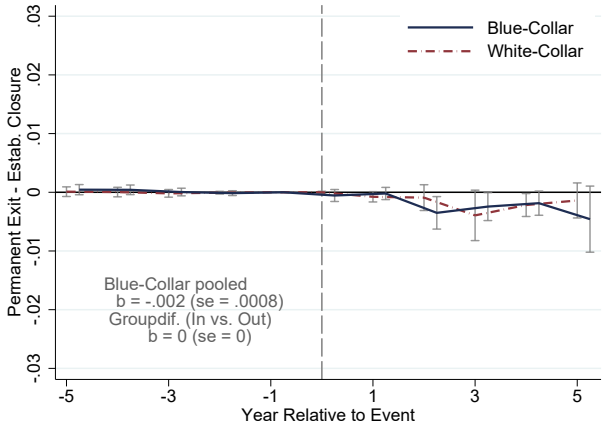
(a) Share of Blue-Collar Works Council members



(b) Involuntary Turnover



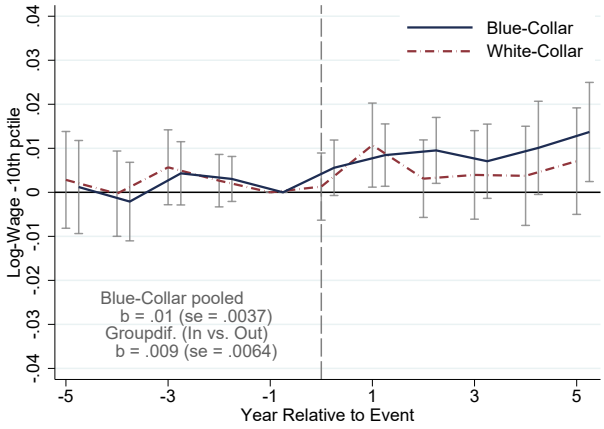
(c) Voluntary Turnover



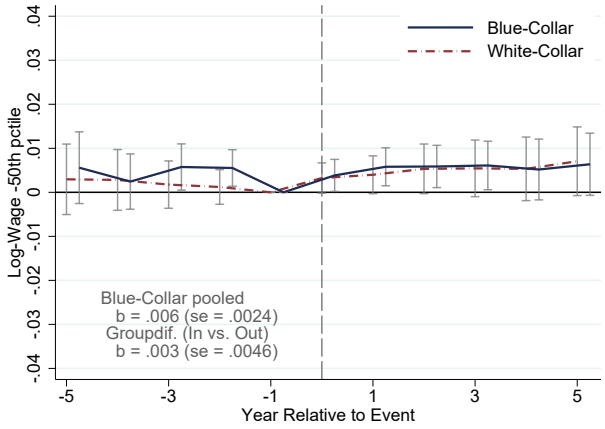
(d) Extensive Margin Exits

Notes: This figure shows event-study estimates of the first large increase in the share of blue-collar workers in the works council (increase $\geq$ 33 percentage points relative to pre-event year) at treated establishments. Event-study specifications include matched control never treated establishment pre-event (1:1 propensity score matching in year prior to event, matching variables include log-firm-size and firm size dummies, blue-collar composition of the workforce and works council, a manufacturing industry dummy and state-dummies). Event study specifications are estimated separately for each group, and include establishment, year-to-event and year FE and are weighted with the size of the workforce (excluding full-time Works Council members). SE clustered at the establishment level. The blue line shows outcomes for blue-collar workers, the red line outcomes for white-collar workers.

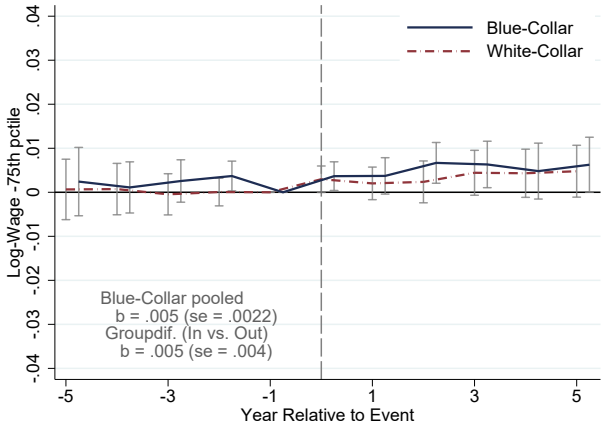
Figure A9: Event Study Estimates Wages – Separately for Blue- and White Collar Worker



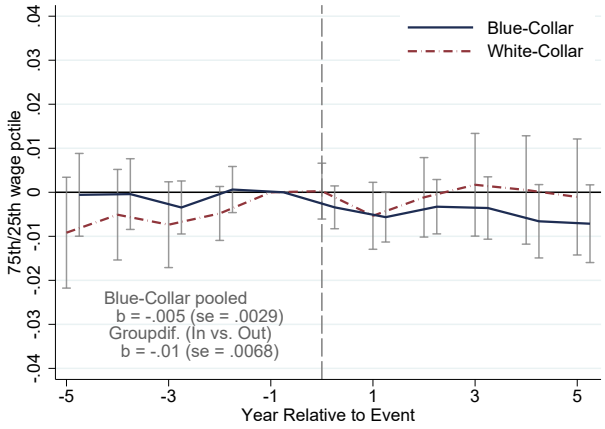
(a) 10th Percentile Log-Wages



(b) Median Log-Wages



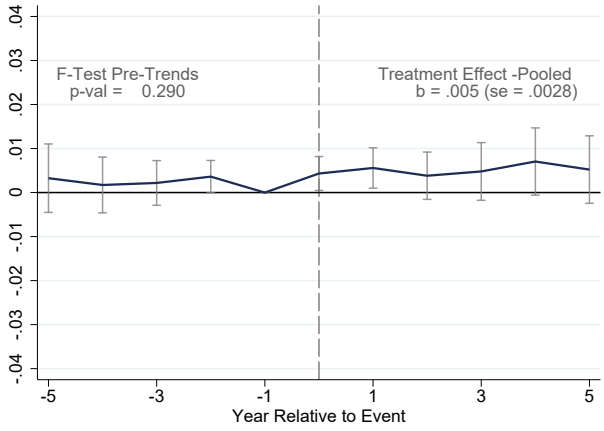
(c) 75th Percentile Log-Wages



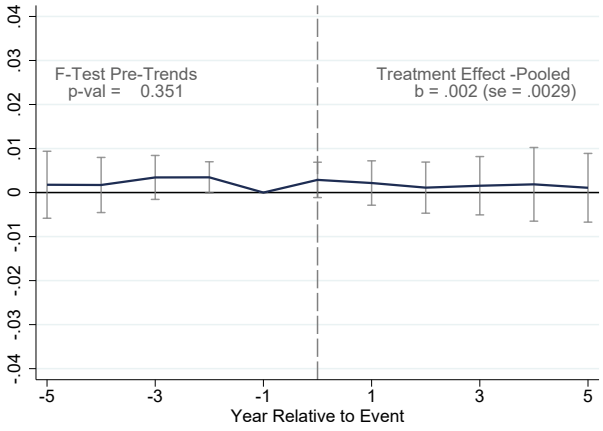
(d) 75th/25th Percentile Log-Wages

Notes: This figure shows event-study estimates of the first large increase in the share of blue-collar workers in the works council (increase $\geq$ 33 percentage points relative to pre-event year) at treated establishments. It restricts to retirement-IV-induced events. Event-study specifications include matched control never treated establishment pre-event (1:1 propensity score matching in year prior to event, matching variables include log-firm-size and firm size dummies, blue-collar composition of the workforce and works council, a manufacturing industry dummy and state-dummies). Event study specifications are estimated separately for each group, and include establishment, year-to-event and year FE and are weighted with the size of the workforce (excluding full-time Works Council members). SE clustered at the establishment level. The green line shows outcomes for the (own) blue-collar group, the red line outcomes for the (other) white-collar group.

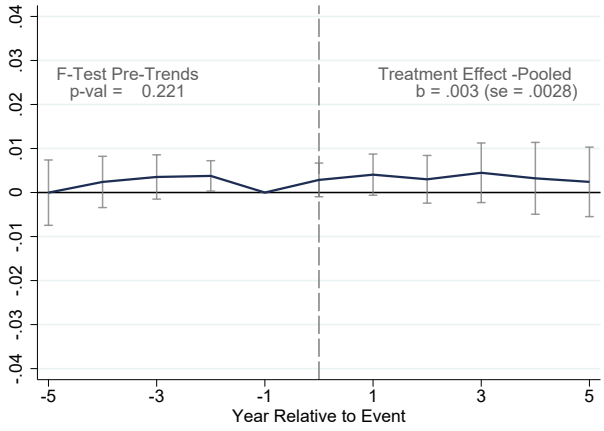
Figure A10: Event Study Estimates Wages – Balanced Sample



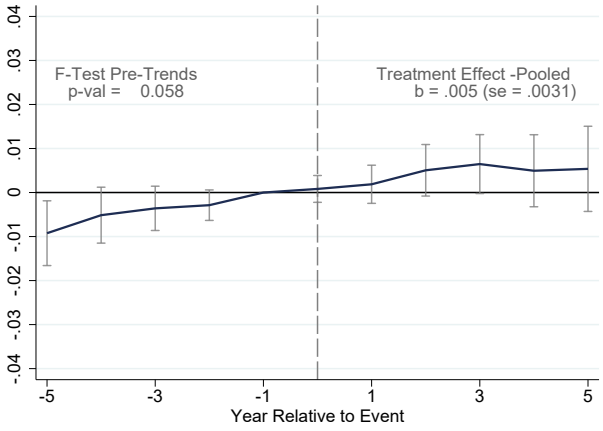
(a) 10th Percentile Log-Wages



(b) Median Log-Wages



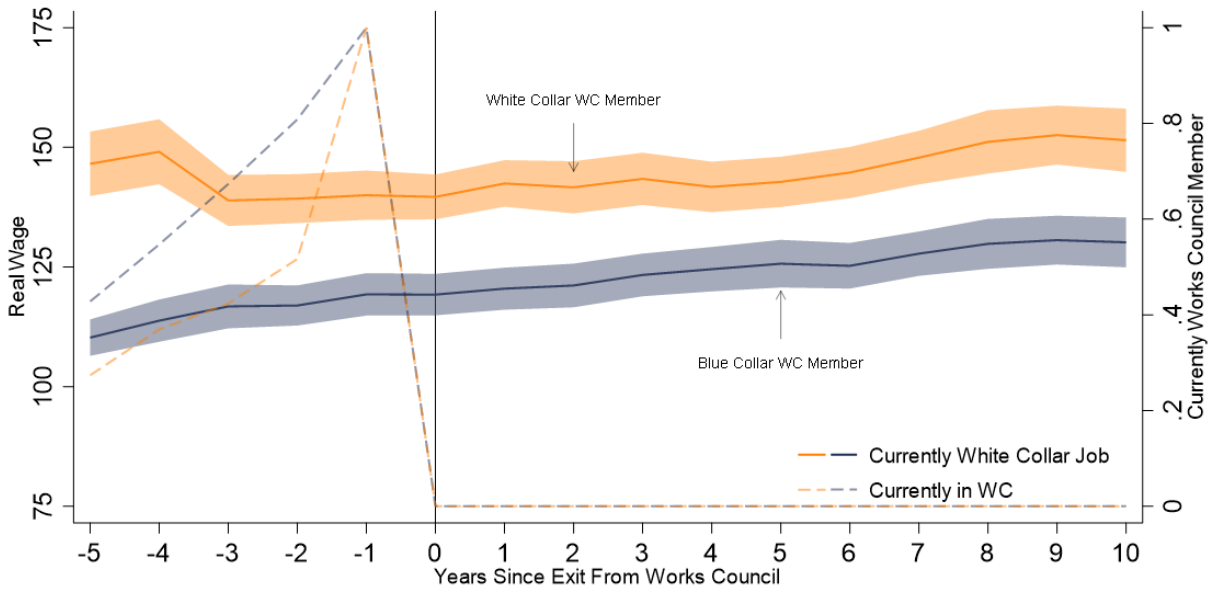
(c) 75th Percentile Log-Wages



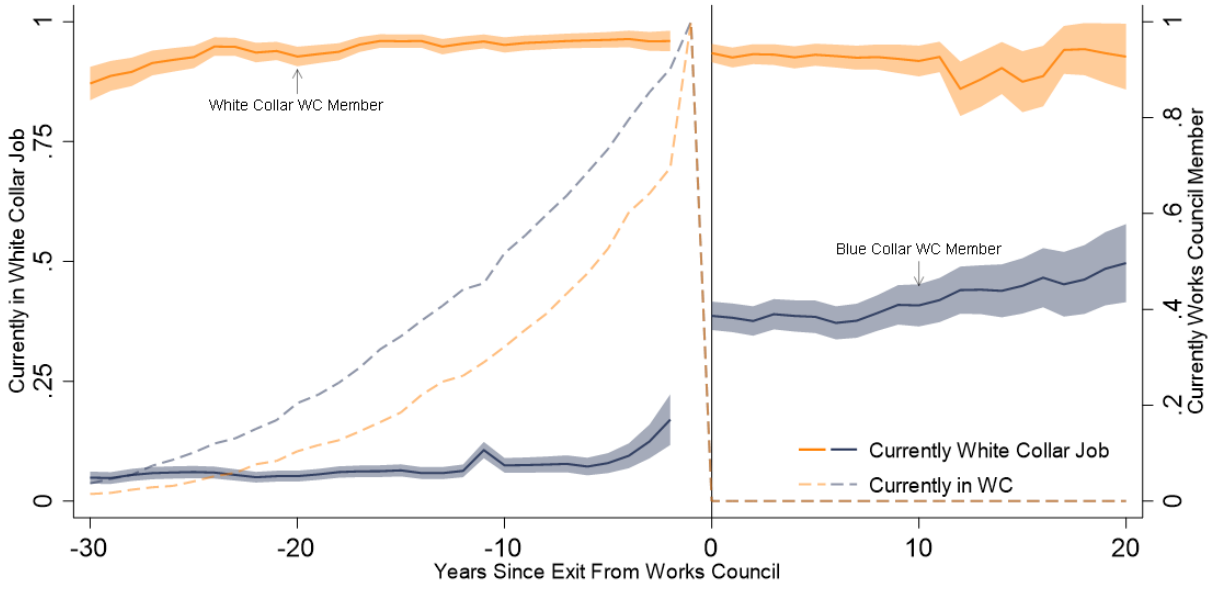
(d) 75th/25th Percentile Log-Wages

Notes: This figure shows event-study estimates of the first large increase in the share of blue-collar workers in the works council (increase $\geq$ 33 percentage points relative to pre-event year) at treated establishments for a balanced sample, i.e., the subset of workers who stay in the establishment throughout the observation period. Event-study specifications include matched control never treated establishments pre-event (1:1 propensity score matching in year prior to event, matching variables include log-firm-size and firm size dummies, blue-collar composition of the workforce and works council, a manufacturing industry dummy and state-dummies).

Figure A11: Works Council Careers Post-Membership



(a) Real Wage

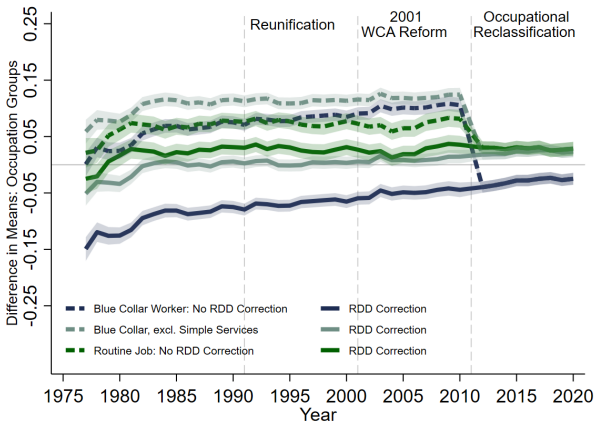


(b) White Collar Occupations

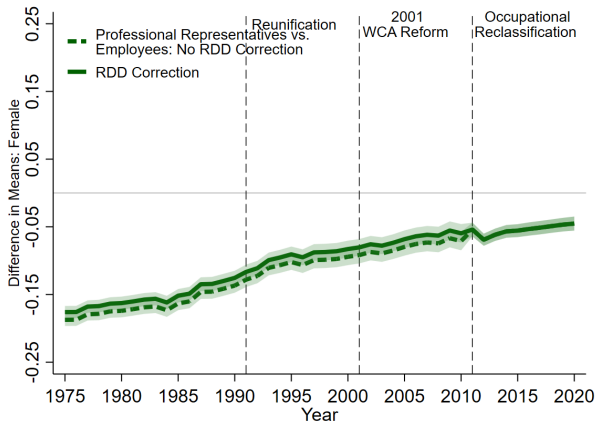
Notes: This figure shows the evolution of real wages and occupational status after exiting the works council. Period -1 is the last year, in which a member is part of a works council for our sample. In the background, the dashed line shows the share of members currently in the works council, which is hence equal to 1 in period -1 by construction. The general sample construction is similar to our main analysis of WC member careers. For real wages in Subfigure (a), we restrict to a balanced sample to avoid confounding by retirement decisions. For the current blue-collar share in Subfigure (b), we use the full (unbalanced) sample, but condition on (i) not currently being in the works council, which is mechanically classified as a white-collar occupation given our approach of identifying works council member based on their current occupation code, and (ii) being employed, again to avoid confounding by retirement decisions. White- and blue-collar members are defined by their first occupation similar to our main analysis.

Figure A12: Corrected vs. Uncorrected Time Series

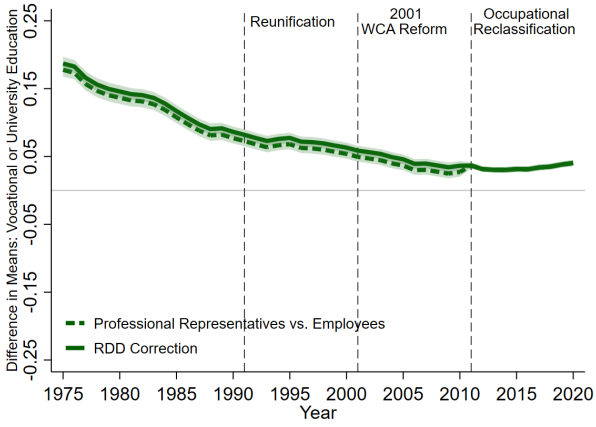
(a) Occupations



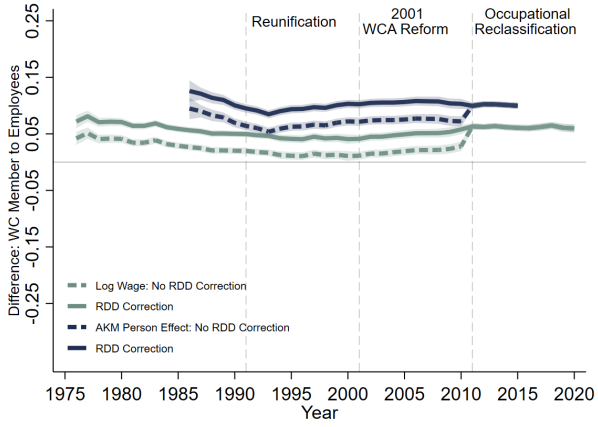
(b) Female



(c) Vocational or University Education



(d) Log Wages and AKM Person Effect



Notes: This figure compares the time series corrected for the structural break due to the change in the occupational code in 2010/2011 with the time series that does not correct for this break. The correction entails estimating a RD model with a second order polynomial and adding the estimated discontinuity to the *pre 2011* time series.

Table A1: Occupations SOEP – By Blue-Collar (incl. Simple Services)

Blue-Collar	Occupation	Blossfeld	Share	Cum Share
0	Office specialists	Qual Commerc. and Admin.	0.18	0.18
0	Salespersons	Smpl Commerc. and Admin.	0.08	0.25
0	Nurses, midwives	Semi-Professions	0.05	0.30
0	Data processing specialists	Qual Commerc. and Admin.	0.05	0.35
0	Social workers, care workers	Semi-Professions	0.05	0.40
0	Bank specialists	Qual Commerc. and Admin.	0.05	0.45
0	Wholesale and retail trade buyers, buyers	Qual Commerc. and Admin.	0.04	0.49
0	Medical receptionists	Qualified Services	0.04	0.52
0	Home wardens, social work teachers	Semi-Professions	0.03	0.55
0	Accountants	Qual Commerc. and Admin.	0.03	0.58
0	Mechanical, motor engineers	Engineer	0.03	0.61
0	Nursery teachers, child nurses	Semi-Professions	0.02	0.63
0	Primary, secondary, special school teachers	Semi-Professions	0.02	0.65
0	Management consultants, organisors	Managers	0.02	0.67
0	Architects, civil engineers	Engineer	0.02	0.68
1	Motor vehicle drivers	Simple Services	0.07	0.07
1	Electrical fitters, mechanics	Qualified Manual	0.04	0.11
1	Cooks	Qualified Manual	0.03	0.14
1	Glass, buildings cleaners	Simple Services	0.03	0.18
1	Motor vehicle repairers	Qualified Manual	0.03	0.21
1	Warehouse managers, warehousemen	Simple Services	0.03	0.24
1	Stores, transport workers	Simple Services	0.03	0.26
1	Plumbers	Qualified Manual	0.03	0.29
1	Engine fitters	Qualified Manual	0.02	0.31
1	Bricklayers	Qualified Manual	0.02	0.33
1	Carpenters	Qualified Manual	0.02	0.35
1	Foremen, master mechanics	Technician	0.02	0.37
1	Steel smiths	Qualified Manual	0.02	0.39
1	Household cleaners	Simple Services	0.02	0.40
1	Chemical plant operatives	Simple Manual	0.02	0.42

Notes: This table tabulates the 15 largest occupation groups (KldB 1988 3-digit) using the SOEP survey for the blue-collar group. We employ the usual sample restrictions (age 20-65, no civil servants or self-employed) but keep all information regardless of work council existence/information and for the years 1984-2019. For details on the group definitions and occupation coding in the SOEP see the Appendix. Column (2) refers to the 1988 3-digit KldB occupation code; column (3) refers to the Blossfeld occupation classification we use to classify blue-collar workers.

Table A2: Size of the Works Council by Number of Employees

(1) N Workers	(2) N All WC Members	(3) N Professional WC Members
21-50	3	0
51-100	5	0
101-200	7	0
201-400	9	1*
401-500	11	1
501-700	11	2
701-900	13	2
901-1,000	13	3
1,001-1,500	15	3
1,501-2,000	17	4
2,001-2,500	19	5
2,501-3,000	21	5
3,001-3,500	23	6
3,501-4,000	25	6
4,001-4,500	27	7
4,501-5,000	29	7
5,001-6,000	31	8
6,001-7,000	33	9
7,001-8,000	35	10
8,001-9,000	35	11

Notes: This table shows the number of all works council members and the number of professional works council members by establishment size according to law since the year 2001. *Works councils at establishments with at least 200 (instead of 201) employees are eligible for at least one professional works council member. Column (1) refers to the number of workers at an establishment that are eligible to vote in works council elections. Column (2) refers to the overall number of works council members (professional and non-professional) a works council is eligible to. This size increases in establishments from 9,001 onwards by two members for every additional 3,000 workers eligible to vote. Column (3) refers to the corresponding number of professional works council members. This number increases to 12 professional members for an establishment size between 9001 and 10,000. And from 10,001 onwards by one member for every additional 2000 workers eligible to vote. Source: *Betriebsverfassungsgesetz* §9 and §38.

Table A3: WC Establishments in Establishment Panel With and Without Professional Representative in IEB

	(1)	(2)	(3)	(4)
	IEB Full-time Council		Difference (1) − (2)	
	No	Yes	Mean	SE
Panel A: Establishment Characteristics and Workforce				
establishment age	20.812	21.514	-0.7022*	0.2730
log-median wage	4.613	4.697	-0.0831***	0.0072
share blue-collar worker	0.423	0.539	-0.1167***	0.0076
share females	0.465	0.341	0.1249***	0.0061
share low educated	0.712	0.747	-0.0354***	0.0048
share medium educated	0.122	0.096	0.0259***	0.0023
share high educated	0.166	0.157	0.0095*	0.0037
Panel B: Industries				
Agriculture	0.001	0.000	0.0005	0.0006
Mining, Energy	0.028	0.028	-0.0003	0.0040
Food	0.027	0.028	-0.0008	0.0039
Consumption Goods	0.036	0.048	-0.0124**	0.0047
Production Goods	0.063	0.156	-0.0927***	0.0070
Investment Goods	0.133	0.310	-0.1778***	0.0093
Construction	0.018	0.008	0.0096***	0.0029
Retail	0.070	0.046	0.0245***	0.0058
Traffic, Telecomunication	0.042	0.063	-0.0206***	0.0052
Credit, Insurance	0.076	0.030	0.0454***	0.0057
Restaurants	0.006	0.003	0.0039*	0.0017
Education	0.043	0.010	0.0332***	0.0042
Health	0.161	0.068	0.0934***	0.0080
Commercial Services	0.104	0.068	0.0369***	0.0069
Other Services	0.029	0.016	0.0132***	0.0037
Non-Profit	0.024	0.003	0.0209***	0.0030
Public Administration	0.139	0.115	0.0231**	0.0081
N	4782	2689		

Notes: This table uses information from the LIAB — an establishment level survey (the IAB establishment panel) merged with employee records from the IEB — to select all establishments that have a works council based on establishment panel survey information. Based on this sample, we compare establishment-level characteristics of those who do not have a full-time works council based on our IEB admin data measure (Column 1) vs. those that do (Column 2). Column 3 shows the mean difference and Column 4 the corresponding standard errors. *, ** and *** refer to the mean difference in Column 3 being significantly different from zero at the .05, .01 and .001 significance level. N refers to the number of establishments.

Table A4: Political Preferences of Blue- and White-Collar Workers – Cultural Issues and Political Influence

	Employees			Representatives		
	Blue	White	Diff.	Blue	White	Diff.
Panel A: General Political Preferences						
High Interest in Politics	0.286	0.433	-0.147*** (0.008)	0.436	0.489	-0.052* (0.029)
Political Involvement: (Very) Important	0.191	0.299	-0.108*** (0.008)	0.269	0.43	-0.16*** (0.032)
Politically Right (Mean 0, SD 1)	0.198	0.0	0.198*** (0.02)	0.274	0.0	0.274*** (0.068)
SPD	0.428	0.297	0.131*** (0.014)	0.533	0.35	0.183*** (0.041)
CDU/CSU	0.321	0.336	-0.015 (0.014)	0.204	0.292	-0.088** (0.036)
FDP	0.019	0.042	-0.023*** (0.004)	0.03	0.025	0.004 (0.012)
Greens	0.078	0.23	-0.152*** (0.009)	0.119	0.198	-0.08*** (0.031)
Linke	0.077	0.071	0.006 (0.008)	0.078	0.111	-0.033 (0.024)
AfD	0.048	0.014	0.033*** (0.005)	0.03	0.008	0.022** (0.011)
Panel B: Preferences for Redistribution (Innovation Sample, 2014, 2019)						
To what extent do you agree personally with the following statements? (1 = Not at all, 7 = Completely)						
(Fully) Agree: Individuals with a high income should pay higher taxes in the future.	0.714	0.65	0.064*** (0.017)			
(Fully) Agree: Individuals with a low income should receive more welfare benefits in the future.	0.614	0.546	0.068*** (0.018)			
Redistribution Index	-0.091	0.086	-0.177*** (0.037)			
Panel C: Cultural Issues (2019)						
To what extent do you agree personally with the following statements? (1 = Not at all, 7 = Completely)						
It is good, if the legislator takes into account, that not all human can uniquely identify as man or woman.	4.433	5.128	-0.696*** (0.064)	4.762	5.07	-0.308 (0.252)
That not all human can uniquely identify with their biological sex should be accepted by our society.	5.117	5.887	-0.77*** (0.056)	5.422	5.857	-0.435** (0.214)
It is perfectly natural that there are also people who are born with both male and female physical characteristics.	5.049	5.749	-0.7*** (0.058)	5.273	5.766	-0.494** (0.229)
Assigning a gender is not that important for a person's development.	3.571	3.714	-0.143** (0.064)	3.584	3.681	-0.097 (0.26)
Schools and preschools should encourage children to engage in activities that are not typically associated with their gender.	4.613	5.291	-0.678*** (0.061)	5.01	5.381	-0.371 (0.238)
That same-sex couples want to have children should be accepted in our society.	4.83	5.706	-0.875*** (0.062)	4.951	5.779	-0.828*** (0.244)
To what extent do you agree with the statement that refugees are good for... (1 = Bad, 10 = Good)						
German Economy	4.773	6.115	-1.341*** (0.065)	5.297	6.162	-0.865*** (0.255)
Cultural Life in Germany	4.646	6.121	-1.475*** (0.067)	5.021	6.393	-1.372*** (0.27)
Germany as a Place to Live	4.309	5.525	-1.216*** (0.061)	4.819	5.679	-0.86*** (0.232)
More Opportunities than Risks in the Short-term	3.46	4.092	-0.631*** (0.055)	3.565	4.292	-0.727*** (0.217)
More Opportunities than Risks in the Long-term	4.478	6.005	-1.526*** (0.07)	5.089	6.096	-1.008*** (0.272)
Cultural Issues Index	0.43	-0.193	0.623*** (0.032)	0.33	-0.153	0.483*** (0.122)
Panel D: Influence on Public Decisions (2019)						
How do you personally assess your own ability to influence public decisions at the following levels? (1 = Not at all, 7 = Completely)						
Municipal	2.888	3.553	-0.665*** (0.054)	3.524	3.619	-0.095 (0.217)
Regional	2.535	2.991	-0.456*** (0.049)	2.981	3.048	-0.067 (0.19)
State	2.172	2.405	-0.233*** (0.043)	2.35	2.42	-0.07 (0.162)
Federal	1.965	2.061	-0.097** (0.042)	2.0	1.944	0.056 (0.147)
International	1.746	1.695	0.051 (0.039)	1.699	1.635	0.064 (0.144)
Influence on Politics Index	-0.126	0.083	-0.209*** (0.03)	0.063	0.076	-0.013 (0.11)
Panel E: Political Inclusion (Innovation Sample, 2019)						
To what extent do the following statements apply? (1 = Not at all, 5 = Completely)						
MPs quickly lose contact with the people.	4.153	4.004	0.149** (0.071)			
Differences between the people and so-called elites are bigger than within the people.	4.145	3.877	0.268*** (0.073)			
People like me do not have an influence on what the government does.	3.905	3.427	0.478*** (0.089)			

Notes: Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All outcomes are survey responses from the SOEP and for our main sample of works council members and represented employees. The only exception are SOEP Innovation Sample responses where we cannot identify works council members. Where outcome are not surveyed concurrently with works council membership, we impute them forward in time to the nearest year with works council membership information. For details on the survey questions and constructed variables see Appendix Section C.

Table A5: Summary Table – Different IEB Samples and Complier Characteristics

	(1) Representation	(2) Event-Study	(3)	(4) IV Sample	(5)
		Treated	Control	All	Complier
Panel A: Establishment & Industry Characteristics					
N WC Members	4.36	2.83	3.95	4.65	3.04
N Employees	2558.83	1704.16	2275.76	2669.04	2231.52
N Employees $\leq$ 250	0.07	0.02	0.02	0.06	0.02
N Employees 251-500	0.17	0.14	0.13	0.16	0.10
N Employees 501-1000	0.23	0.29	0.29	0.23	0.24
N Employees $>$ 1000	0.53	0.54	0.55	0.55	0.64
ln(N Employees)	7.09	7.05	7.16	7.14	7.27
West	0.89	0.94	0.95	0.91	0.97
Manufacturing Ind.	0.61	0.72	0.70	0.63	0.71
Panel B: Composition Workforce					
Share Employees: Blue-Collar	0.61	0.70	0.68	0.61	0.64
Share Works Council: Blue-Collar	0.46	0.39	0.29	0.50	0.69
Share Employees: Female	0.31	0.27	0.28	0.29	0.27
Share Employees: Vocational Degree	0.68	0.64	0.64	0.69	0.67
Share Employees: University Degree	0.13	0.09	0.09	0.13	0.14
Age in Years	41.45	40.51	40.70	41.06	41.38
Monthly Earnings (Euro)	3268.28	2945.73	2946.96	3223.22	3336.96
Log Real Daily Wage	4.62	4.52	4.52	4.61	4.64
Number of Observations	271,031	20,007	17,553	183,299	—
Number of Establishments	29,513	2,190	2,190	16,986	—

Notes: This table provides summary statistics for the different samples used in the administrative data. Column (1) summarizes the representation sample used in the descriptive part. Columns (2) and (3) show the event-study sample for the treated and matched control establishments respectively. Column (4) shows the IV sample. Column (5) shows estimated complier characteristics. For details on the procedure see Appendix Section H. All observations are at the establishment×year level. Observations weighted with the number of employees (capped at the 99th percentile) similar to the main analysis.

Table A6: Effects of Blue-Collar Representation on Turnover Separately for Blue- and White- Collar Workers

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Involuntary Exits					
Blue-Collar Worker	-0.0082***	-0.0043	-0.0072*	-0.0066**	-0.0032
	[0.0022]	[0.0026]	[0.0042]	[0.0033]	[0.0027]
Blue- rel. to White-Collar Worker	-0.0011	-0.0014	0.0061	-0.0014	-0.0012
	[0.0025]	[0.0021]	[0.0049]	[0.0029]	[0.0021]
Mean Dep Var	0.08	0.12	0.08	0.12	0.12
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Voluntary Exits					
Blue-Collar Worker	0.0012	-0.0015**	0.0035	-0.0008	-0.0015**
	[0.0009]	[0.0007]	[0.0025]	[0.0009]	[0.0007]
Blue- rel. to White-Collar Worker	0.0005	-0.0011	0.0021	-0.0007	-0.0012
	[0.0010]	[0.0008]	[0.0031]	[0.0011]	[0.0008]
Mean Dep Var	0.01	0.01	0.01	0.01	0.01
N Obs.	74160	314775	13654	273790	314775
N Establishments	2190	16352	391	14853	16352
Increase Council Share	.462	1	.465	1	1

Notes: This table presents estimates of the effect of blue-collar representation on outcomes separately for blue- and white-collar workers. All estimates are based on event-study and retirement-IV estimates as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance on the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event study and IV specification respectively. Column (3) restricts to retirement-induced events for the event study specification. Column (4) employs a difference in difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient form an intention to treat IV, where instead of actual retirement exits the threshold of crossing retirement age (becoming 63 and older) is used.

Table A7: Effects of Blue-Collar Representation on Hiring Composition

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Log-Hires					
Blue-Collar Representation	0.0285	0.0617*	-0.0390	0.0249	0.0674*
	[0.0279]	[0.0343]	[0.0641]	[0.0396]	[0.0355]
Mean Dep Var	3.11	2.55	3.19	2.66	2.55
N Obs.	70533	271395	13146	224838	271395
N Establishments	2190	15071	391	13280	15071
Panel B: Share Hires Regular Worker					
Blue-Collar Representation	-0.0069	0.0228***	-0.0040	0.0181*	0.0238***
	[0.0065]	[0.0072]	[0.0140]	[0.0094]	[0.0075]
Mean Dep Var	0.73	0.71	0.73	0.71	0.71
N Obs.	70533	271395	13146	224838	271395
N Establishments	2190	15071	391	13280	15071
Panel C: Share Hires Trainees					
Blue-Collar Representation	0.0081	-0.0112	0.0081	-0.0154*	-0.0116
	[0.0064]	[0.0069]	[0.0140]	[0.0089]	[0.0071]
Mean Dep Var	0.23	0.21	0.25	0.21	0.21
N Obs.	70533	271395	13146	224838	271395
N Establishments	2190	15071	391	13280	15071
Panel D: Share Hires Mini-Jobs					
Blue-Collar Representation	-0.0021**	-0.0140***	-0.0031	-0.0067***	-0.0142***
	[0.0011]	[0.0024]	[0.0020]	[0.0023]	[0.0024]
Mean Dep Var	0.02	0.05	0.01	0.05	0.05
N Obs.	70533	271395	13146	224838	271395
N Establishments	2190	15071	391	13280	15071
Increase Council Share	.462	1	.465	1	1

Notes: This table presents estimates of the effect of blue-collar representation on the composition of new hires between t and t+1 for different on outcomes. All estimates are based on event-study and retirement-IV estimates as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance on the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event study and IV specification respectively. Column (3) restricts to retirement-induced events for the event study specification. Column (4) employs a difference in difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient form an intention to treat IV, where instead of actual retirement exits the threshold of crossing retirement age (becoming 63 and older) is used.

Table A8: Effects of Blue-Collar Representation on Exit Composition

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Share Exits Regular Worker					
Blue-Collar Representation	-0.0026	0.0127***	0.0081	0.0043	0.0131***
	[0.0036]	[0.0046]	[0.0070]	[0.0055]	[0.0048]
Mean Dep Var	0.87	0.83	0.89	0.82	0.83
N Obs.	72367	289997	13417	240592	289997
N Establishments	2190	15827	391	13747	15827
Panel B: Share Exits Trainees					
Blue-Collar Representation	0.0050	-0.0097***	-0.0048	-0.0030	-0.0103***
	[0.0031]	[0.0032]	[0.0064]	[0.0037]	[0.0033]
Mean Dep Var	0.07	0.06	0.08	0.07	0.06
N Obs.	72367	289997	13417	240592	289997
N Establishments	2190	15827	391	13747	15827
Panel C: Share Exits Mini-Jobs					
Blue-Collar Representation	-0.0006	-0.0100***	-0.0019	-0.0032*	-0.0104***
	[0.0008]	[0.0020]	[0.0013]	[0.0019]	[0.0020]
Mean Dep Var	0.02	0.05	0.01	0.04	0.05
N Obs.	72367	289997	13417	240592	289997
N Establishments	2190	15827	391	13747	15827
Increase Council Share	.462	1	.465	1	1

Notes: This table presents estimates of the effect of blue-collar representation on the composition of workers exiting the establishment between year t and t+1. All estimates are based on event-study and retirement-IV estimates as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance on the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event study and IV specification respectively. Column (3) restricts to retirement-induced events for the event study specification. Column (4) employs a difference in difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient form an intention to treat IV, where instead of actual retirement exits the threshold of crossing retirement age (becoming 63 and older) is used.

Table A9: Event-Study Estimates Turnover - Additional Robustness

	Baseline	Weighted	Industry	Estabsize	Period		Works Council Size	
	Event	to all Estab.	Controls	≤ 2000	< 1993	≥ 1993	$= 1$	≥ 2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Involuntary Exits								
Blue-Collar Representation	-0.0076***	-0.0070***	-0.0077***	-0.0081***	-0.0065***	-0.0111**	-0.0057**	-0.0099***
	[0.0020]	[0.0025]	[0.0020]	[0.0021]	[0.0022]	[0.0045]	[0.0027]	[0.0026]
Mean Dep Var	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
N Obs.	75120	72320	75120	66982	49244	25876	41448	33672
N Establishments	2190	2088	2190	1940	1398	792	1209	981
Panel B: Voluntary Exits								
Blue-Collar Representation	0.0010	0.0014	0.0009	0.0003	0.0003	0.0022	0.0016	0.0001
	[0.0008]	[0.0010]	[0.0008]	[0.0008]	[0.0008]	[0.0019]	[0.0011]	[0.0011]
Mean Dep Var	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
N Obs.	74160	71418	74160	66135	48693	25467	40942	33218
N Establishments	2190	2088	2190	1940	1398	792	1209	981
Panel C: Exits on the Extensive Margin (Establishment Closures)								
Blue-Collar Representation	-0.0021***	-0.0023**	-0.0020***	-0.0017**	-0.0017***	-0.0031*	-0.0017**	-0.0025***
	[0.0006]	[0.0010]	[0.0006]	[0.0007]	[0.0006]	[0.0018]	[0.0008]	[0.0009]
Mean Dep Var	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N Obs.	75120	72320	75120	66982	49244	25876	41448	33672
N Establishments	2190	2088	2190	1940	1398	792	1209	981

Notes: The table presents robustness specifications for the event-study of the effect of blue-collar representation on turnover. All estimates are based on event-study specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Column (1) shows the baseline results. Column two shows a version that uses inverse propensity weights (IPW) from a probit-regression of treatment-probability on establishment characteristics (firm size (three categories) works council size (dummy for each size), share of blue-collar workers, females, non-germans and three education groups)). To also keep the firm-size weights final weights are constructed as the product of firm-size and regression-based IPWs. Column (3) includes 2-digit industry code as controls. Column (4) restricts to establishment below 2000 employees. Columns (5) and (6) split the regression by period (before and after the year 1993) and Column (7) and (8) split by the size of the works council.

Table A10: Event-Study Estimates Wages - Additional Robustness

	Baseline	Weighted	Industry	Estabsize	Period		Works Council Size	
	Event	to all Estab.	Controls	≤ 2000	< 1993	≥ 1993	$= 1$	≥ 2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Log Wages 10th Percentile								
Blue-Collar Representation	0.0077***	0.0077	0.0075**	0.0038	0.0031	0.0222***	0.0059	0.0096**
	[0.0030]	[0.0071]	[0.0030]	[0.0032]	[0.0030]	[0.0078]	[0.0040]	[0.0042]
Mean Dep Var	4.12	4.12	4.12	4.13	4.08	4.20	4.12	4.13
N Obs.	75120	72320	75120	66982	49244	25876	41448	33672
N Establishments	2190	2088	2190	1940	1398	792	1209	981
Panel B: Log Wages Median								
Blue-Collar Representation	0.0056***	0.0053**	0.0055***	0.0034	0.0036*	0.0111**	0.0031	0.0068**
	[0.0020]	[0.0026]	[0.0020]	[0.0021]	[0.0020]	[0.0052]	[0.0027]	[0.0028]
Mean Dep Var	4.50	4.50	4.50	4.50	4.45	4.59	4.49	4.51
N Obs.	75120	72320	75120	66982	49244	25876	41448	33672
N Establishments	2190	2088	2190	1940	1398	792	1209	981
Panel C: Log Wages 75th Percentile								
Blue-Collar Representation	0.0045***	0.0038*	0.0043**	0.0026	0.0019	0.0117***	0.0010	0.0071***
	[0.0017]	[0.0023]	[0.0017]	[0.0018]	[0.0018]	[0.0043]	[0.0024]	[0.0023]
Mean Dep Var	4.67	4.67	4.67	4.67	4.62	4.77	4.67	4.68
N Obs.	75120	72320	75120	66982	49244	25876	41448	33672
N Establishments	2190	2088	2190	1940	1398	792	1209	981

Notes: The table presents robustness specifications for the event-study of the effect of blue-collar representation on wages. All estimates are based on event-study specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Column (1) shows the baseline results. Column two shows a version that uses inverse propensity weights (IPW) from a probit-regression of treatment-probability on establishment characteristics (firm size (three categories) works council size (dummy for each size), share of blue-collar workers, females, non-germans and three education groups)). To also keep the firm-size weights final weights are constructed as the product of firm-size and regression-based IPWs. Column (3) includes 2-digit industry code as controls. Column (4) restricts to establishment below 2000 employees. Columns (5) and (6) split the regression by period (before and after the year 1993) and Column (7) and (8) split by the size of the works council.

Table A11: Event-Study and Retirement IV Estimates Turnover - Additional Robustness

	Baseline Specifications		Different Occupation-Groups: Routine		Different Occupation-Groups: Blue Col. /wo service		Varying Post-Event Window: short post (t+3)		Varying Post-Event Window: long post (t+7)		Election Years Only	Varying Retirement Thresholds: Ret. Age 60	Varying Retirement Thresholds: Ret. Age 65
	Event	IV	Event	IV	Event	IV	Event	IV	Event	IV	Event	IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Panel A: Involuntary Exits													
Blue-Collar Representation	-0.0076***	-0.0036*	-0.0052***	0.0002	-0.0023	-0.0030	-0.0088***	-0.0026	-0.0082***	-0.0030	-0.0073***	-0.0028	-0.0037*
	[0.0020]	[0.0022]	[0.0019]	[0.0021]	[0.0021]	[0.0022]	[0.0026]	[0.0020]	[0.0023]	[0.0026]	[0.0027]	[0.0022]	[0.0021]
Mean Dep Var	0.08	0.12	0.08	0.12	0.08	0.12	0.08	0.12	0.08	0.12	0.08	0.12	0.12
N Obs.	75120	337059	87122	348255	72552	325285	31390	355462	37532	280550	20840	337059	337059
N Establishments	2190	16986	2541	16954	2085	16995	2190	17447	2190	14772	1939	16986	16986
Panel B: Voluntary Exits													
Blue-Collar Representation	0.0010	-0.0009	0.0005	-0.0009	0.0008	-0.0006	0.0012	-0.0010	0.0010	-0.0008	-0.0002	-0.0008	-0.0010
	[0.0008]	[0.0007]	[0.0010]	[0.0007]	[0.0007]	[0.0007]	[0.0009]	[0.0007]	[0.0009]	[0.0009]	[0.0012]	[0.0007]	[0.0007]
Mean Dep Var	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
N Obs.	74160	314775	86120	325512	71707	303550	31045	333352	37046	255354	20540	314775	314775
N Establishments	2190	16352	2541	16312	2085	16357	2190	16903	2190	11475	1931	16352	16352
Panel C: Exits on the Extensive Margin (Establishment Closures)													
Blue-Collar Representation	-0.0021***	0.0000	-0.0009	0.0014	-0.0024***	0.0004	-0.0020***	0.0006	-0.0024***	0.0007	-0.0024**	0.0005	0.0002
	[0.0006]	[0.0015]	[0.0006]	[0.0014]	[0.0007]	[0.0016]	[0.0007]	[0.0013]	[0.0008]	[0.0020]	[0.0010]	[0.0015]	[0.0015]
Mean Dep Var	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.04	0.00	0.05	0.00	0.04	0.04
N Obs.	75120	337059	87122	348255	72552	325285	31390	355462	37532	280550	20840	337059	337059
N Establishments	2190	16986	2541	16954	2085	16995	2190	17447	2190	14772	1939	16986	16986

Notes: This table presents robustness estimates of the effect of blue-collar representation on turnover. All estimates are based on event-study and retirement IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance on the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event study and IV specification respectively. Column (3) – (6) show event study and IV estimates for alternative groupings of occupations. Column (3) and (4) selects occupations that are based on their task content as mainly routine work, whereas Columns (5) and (6) employ a more narrow blue-collar definition that classifies simple service occupations as white- instead of blue-collar. Columns (7) – (10) show variations in the length of the post-event window, with Columns (7) and (8) considering 3 post-event years and Columns (9) and (10) considering 7 years (instead of 5 years in the main specification) respectively. Column (11) shows event study results restricted to events where actual and imputed events coincide. Columns (12) and (13) employ different age-thresholds of the retirement exit IV. Column (12) uses works councilors crossing the age 60 threshold, whereas Column (13) looks at the crossing of the age threshold 65.

Table A12: Event-Study and Retirement IV Estimates Wages – Additional Robustness

	Baseline Specifications		Different Occupation-Groups: Routine		Different Occupation-Groups: Blue Col. /wo service		Varying Post-Event Window: short post (t+3)		Varying Post-Event Window: long post (t+7)		Election Years Only	Varying Retirement Thresholds: Ret. Age 60	Varying Retirement Thresholds: Ret. Age 65
	Event	IV	Event	IV	Event	IV	Event	IV	Event	IV	Event	IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Panel A: Log Wages 10th Percentile													
Blue-Collar Representation	0.0077***	0.0185***	0.0038	0.0207***	0.0040	0.0213***	0.0080**	0.0202***	0.0096***	0.0074	0.0090**	0.0172**	0.0191***
	[0.0030]	[0.0066]	[0.0025]	[0.0062]	[0.0026]	[0.0064]	[0.0033]	[0.0066]	[0.0037]	[0.0074]	[0.0044]	[0.0067]	[0.0066]
Mean Dep Var	4.12	4.18	4.14	4.20	4.15	4.21	4.13	4.18	4.13	4.19	4.11	4.18	4.18
N Obs.	75120	337059	87122	348255	72552	325285	31390	355462	37532	280550	20840	337059	337059
N Establishments	2190	16986	2541	16954	2085	16995	2190	17447	2190	14772	1939	16986	16986
Panel B: Log Wages Median													
Blue-Collar Representation	0.0056***	0.0127***	0.0007	0.0170***	0.0023	0.0148***	0.0054**	0.0141***	0.0059**	0.0073	0.0012	0.0122***	0.0132***
	[0.0020]	[0.0041]	[0.0020]	[0.0046]	[0.0018]	[0.0047]	[0.0022]	[0.0040]	[0.0024]	[0.0047]	[0.0036]	[0.0042]	[0.0041]
Mean Dep Var	4.50	4.57	4.50	4.58	4.49	4.57	4.42	4.57	4.42	4.58	4.41	4.57	4.57
N Obs.	75120	337059	87122	348255	72552	325285	31390	355462	37532	280550	20840	337059	337059
N Establishments	2190	16986	2541	16954	2085	16995	2190	17447	2190	14772	1939	16986	16986
Panel C: Log Wages 75th Percentile													
Blue-Collar Representation	0.0045***	0.0052	0.0011	0.0129***	0.0014	0.0099***	0.0050**	0.0063**	0.0055**	0.0046	-0.0010	0.0048	0.0057*
	[0.0017]	[0.0032]	[0.0018]	[0.0037]	[0.0018]	[0.0038]	[0.0020]	[0.0032]	[0.0022]	[0.0037]	[0.0033]	[0.0033]	[0.0032]
Mean Dep Var	4.67	4.74	4.67	4.75	4.67	4.75	4.56	4.74	4.56	4.76	4.55	4.74	4.74
N Obs.	75120	337059	87122	348255	72552	325285	31390	355462	37532	280550	20840	337059	337059
N Establishments	2190	16986	2541	16954	2085	16995	2190	17447	2190	14772	1939	16986	16986

Notes: This table presents robustness estimates of the effect of blue-collar representation on wages. All estimates are based on event-study and retirement IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance on the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event study and IV specification respectively. Column (3) – (6) show event study and IV estimates for alternative groupings of occupations. Columns (3) and (4) selects occupations that are based on their task content as mainly routine work, whereas Columns (5) and (6) employ a more narrow blue-collar definition that classifies simple service occupations as white- instead of blue-collar. Columns (7) – (10) show variations in the length of the post-event window, with Columns (7) and (8) considering 3 post-event years and Columns (9) and (10) considering 7 years (instead of 5 years in the main specification) respectively. Column (11) shows event study results restricted to events where actual and imputed events coincide. Columns (12) and (13) employ different age-thresholds of the retirement exit IV. Column (12) uses works councilors crossing the age 60 threshold, whereas Column (13) looks at the crossing of the age threshold 65.

Table A13: Effects of White-Collar Representation on Turnover of Blue- and White-Collar Workers

	Baseline Event (1)	Retirement Event (2)
Panel A: Involuntary Exits		
White-Collar Representation	-0.0021	-0.0018
	[0.0026]	[0.0047]
Mean Dep Var	0.07	0.08
N Obs.	36596	8172
N Establishments	1065	245
Panel B: Voluntary Exits		
White-Collar Representation	-0.0001	-0.0002
	[0.0011]	[0.0022]
Mean Dep Var	0.01	0.01
N Obs.	36097	8027
N Establishments	1065	245
Panel C: Exits on the Extensive Margin (Establishment Closures)		
White-Collar Representation	0.0003	0.0021
	[0.0011]	[0.0026]
Mean Dep Var	0.00	0.00
N Obs.	36596	8172
N Establishments	1065	245
Increase White-Collar Council Share	0.51	0.52

Notes: The table presents estimates of the effect of white-collar (instead of blue-collar) representation on outcomes. Events are defined as increases of the white-collar share on the works council ≥ 33 percentage points relative to the pre-event year. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) represent baseline results for event study. Column (2) shows results for the retirement-induced event-study specification.

Table A14: Effects of White-Collar Representation on Wages

	Baseline Event (1)	Retirement Event (2)
Panel A: Log-Wage 10th Percentile		
White-Collar Representation	-0.0038	0.0000
	[0.0045]	[0.0090]
Mean Dep Var	4.23	4.22
N Obs.	36596	8172
N Establishments	1065	245
Panel B: Median Log-Wage		
White-Collar Representation	-0.0025	-0.0024
	[0.0028]	[0.0065]
Mean Dep Var	4.62	4.59
N Obs.	36596	8172
N Establishments	1065	245
Panel C: Log-Wage 75th Percentile		
White-Collar Representation	-0.0013	-0.0003
	[0.0025]	[0.0066]
Mean Dep Var	4.78	4.75
N Obs.	36596	8172
N Establishments	1065	245
Increase White-Collar Council Share	0.51	0.52

Notes: The table presents robustness estimates of the effect of blue-collar representation on outcomes. Events are defined as increases of the white-collar share on the works council $\geq$ 33 percentage points relative to the pre-event year. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) represent baseline results for event study. Column (2) shows results for the retirement-induced event-study specification.

Table A15: Effects on Involuntary Turnover – Varying Establishment Size Cutoffs

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Baseline (all Firm-Sizes)					
Blue-Collar Representation	-0.0076***	-0.0036*	-0.0102***	-0.0059**	-0.0026
	[0.0020]	[0.0022]	[0.0037]	[0.0027]	[0.0022]
Mean Dep Var	0.08	0.12	0.08	0.12	0.12
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Firm-Size ≤ 4000					
Blue-Collar Representation	-0.0084***	-0.0026	-0.0119***	-0.0045*	-0.0017
	[0.0018]	[0.0021]	[0.0038]	[0.0026]	[0.0022]
Mean Dep Var	0.08	0.12	0.08	0.12	0.12
N Obs.	73540	328875	13730	288144	328875
N Establishments	2188	16862	391	15351	16862
Panel C: Firm-Size ≤ 2000					
Blue-Collar Representation	-0.0093***	-0.0019	-0.0126***	-0.0016	-0.0014
	[0.0019]	[0.0020]	[0.0039]	[0.0024]	[0.0020]
Mean Dep Var	0.08	0.12	0.08	0.13	0.12
N Obs.	69464	315118	13178	276026	315118
N Establishments	2173	16614	391	15113	16614
Panel D: Firm-Size ≤ 1000					
Blue-Collar Representation	-0.0106***	-0.0029	-0.0174***	-0.0036	-0.0029
	[0.0021]	[0.0019]	[0.0045]	[0.0024]	[0.0020]
Mean Dep Var	0.08	0.13	0.08	0.13	0.13
N Obs.	55386	276303	10130	241587	276303
N Establishments	2084	15772	375	14292	15772
Panel E: Firm-Size ≤ 500					
Blue-Collar Representation	-0.0082**	-0.0023	-0.0138**	-0.0041	-0.0023
	[0.0032]	[0.0027]	[0.0059]	[0.0034]	[0.0028]
Mean Dep Var	0.08	0.13	0.08	0.13	0.13
N Obs.	29010	201622	4782	175578	201622
N Establishments	1524	13350	255	12008	13350

Notes: The table presents robustness estimates of the effect of blue-collar representation on involuntary turnover. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A16: Effects on Voluntary Turnover – Varying Establishment Size Cutoffs

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Baseline (all Firm-Sizes)					
Blue-Collar Representation	0.0010	-0.0009	0.0024	-0.0005	-0.0009
	[0.0008]	[0.0007]	[0.0027]	[0.0009]	[0.0007]
Mean Dep Var	0.01	0.01	0.01	0.01	0.01
N Obs.	74160	314775	13654	273790	314775
N Establishments	2190	16352	391	14853	16352
Panel B: Firm-Size ≤ 4000					
Blue-Collar Representation	0.0012	-0.0001	0.0024	0.0010	0.0007
	[0.0009]	[0.0027]	[0.0028]	[0.0031]	[0.0027]
Mean Dep Var	0.01	0.02	0.01	0.02	0.02
N Obs.	72592	328875	13576	288144	328875
N Establishments	2188	16862	391	15351	16862
Panel C: Firm-Size ≤ 2000					
Blue-Collar Representation	-0.0001	-0.0011	-0.0009	-0.0001	-0.0010
	[0.0008]	[0.0024]	[0.0020]	[0.0027]	[0.0024]
Mean Dep Var	0.01	0.02	0.01	0.02	0.02
N Obs.	68564	315118	13028	276026	315118
N Establishments	2173	16614	391	15113	16614
Panel D: Firm-Size ≤ 1000					
Blue-Collar Representation	-0.0016**	-0.0050**	-0.0007	-0.0030	-0.0050**
	[0.0008]	[0.0023]	[0.0016]	[0.0027]	[0.0024]
Mean Dep Var	0.01	0.02	0.01	0.02	0.02
N Obs.	54632	276303	10004	241587	276303
N Establishments	2080	15772	374	14292	15772
Panel E: Firm-Size ≤ 500					
Blue-Collar Representation	-0.0023**	0.0007	-0.0011	0.0010	0.0005
	[0.0010]	[0.0026]	[0.0019]	[0.0030]	[0.0027]
Mean Dep Var	0.01	0.02	0.01	0.02	0.02
N Obs.	28537	201622	4711	175578	201622
N Establishments	1506	13350	251	12008	13350

Notes: The table presents robustness estimates of the effect of blue-collar representation on voluntary turnover. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A17: Effects on Permanent Exits – Varying Establishment Size Cutoffs

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Baseline (all Firm-Sizes)					
Blue-Collar Representation	-0.0021***	0.0000	-0.0020	0.0001	0.0005
	[0.0006]	[0.0015]	[0.0015]	[0.0017]	[0.0016]
Mean Dep Var	0.00	0.04	0.00	0.05	0.04
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Firm-Size ≤ 4000					
Blue-Collar Representation	-0.0026***	0.0028	-0.0026	0.0034	0.0035
	[0.0007]	[0.0025]	[0.0016]	[0.0028]	[0.0026]
Mean Dep Var	0.00	0.05	0.00	0.05	0.05
N Obs.	73540	328875	13730	288144	328875
N Establishments	2188	16862	391	15351	16862
Panel C: Firm-Size ≤ 2000					
Blue-Collar Representation	-0.0025***	0.0004	-0.0034*	0.0006	0.0005
	[0.0008]	[0.0026]	[0.0018]	[0.0029]	[0.0027]
Mean Dep Var	0.00	0.05	0.00	0.06	0.05
N Obs.	69464	315118	13178	276026	315118
N Establishments	2173	16614	391	15113	16614
Panel D: Firm-Size ≤ 1000					
Blue-Collar Representation	-0.0030***	-0.0035	-0.0064**	-0.0031	-0.0032
	[0.0011]	[0.0026]	[0.0032]	[0.0029]	[0.0027]
Mean Dep Var	0.00	0.05	0.00	0.06	0.05
N Obs.	55386	276303	10130	241587	276303
N Establishments	2084	15772	375	14292	15772
Panel E: Firm-Size ≤ 500					
Blue-Collar Representation	-0.0055**	-0.0019	-0.0015	-0.0029	-0.0024
	[0.0023]	[0.0036]	[0.0037]	[0.0039]	[0.0038]
Mean Dep Var	0.00	0.06	0.00	0.06	0.06
N Obs.	29010	201622	4782	175578	201622
N Establishments	1524	13350	255	12008	13350

Notes: The table presents robustness estimates of the effect of blue-collar representation on permanent exits. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A18: Effects on Wages (10th Percentile) – Varying Establishment Size Cutoffs

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Baseline (all Firm-Sizes)					
Blue-Collar Representation	0.0077***	0.0185***	0.0037	-0.0098	0.0185***
	[0.0030]	[0.0066]	[0.0058]	[0.0060]	[0.0068]
Mean Dep Var	4.12	4.18	4.12	4.20	4.18
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Firm-Size ≤ 4000					
Blue-Collar Representation	0.0066**	0.0181***	0.0068	-0.0150**	0.0181***
	[0.0031]	[0.0060]	[0.0057]	[0.0059]	[0.0062]
Mean Dep Var	4.12	4.17	4.12	4.19	4.17
N Obs.	73540	328875	13730	288144	328875
N Establishments	2188	16862	391	15351	16862
Panel C: Firm-Size ≤ 2000					
Blue-Collar Representation	0.0043	0.0160***	0.0077	-0.0135**	0.0152***
	[0.0033]	[0.0057]	[0.0062]	[0.0058]	[0.0059]
Mean Dep Var	4.11	4.17	4.11	4.18	4.17
N Obs.	69464	315118	13178	276026	315118
N Establishments	2173	16614	391	15113	16614
Panel D: Firm-Size ≤ 1000					
Blue-Collar Representation	0.0012	0.0163***	0.0093	-0.0089	0.0148***
	[0.0037]	[0.0055]	[0.0080]	[0.0061]	[0.0057]
Mean Dep Var	4.10	4.14	4.10	4.16	4.14
N Obs.	55386	276303	10130	241587	276303
N Establishments	2084	15772	375	14292	15772
Panel E: Firm-Size ≤ 500					
Blue-Collar Representation	-0.0042	0.0304***	-0.0058	0.0067	0.0315***
	[0.0059]	[0.0067]	[0.0122]	[0.0080]	[0.0069]
Mean Dep Var	4.08	4.10	4.11	4.12	4.10
N Obs.	29010	201622	4782	175578	201622
N Establishments	1524	13350	255	12008	13350

Notes: The table presents robustness estimates of the effect of blue-collar representation on wages (10th percentile). All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A19: Effects on Wages (50th Percentile) – Varying Establishment Size Cutoffs

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Baseline (all Firm-Sizes)					
Blue-Collar Representation	0.0056***	0.0127***	0.0038	-0.0086**	0.0119***
	[0.0020]	[0.0041]	[0.0043]	[0.0041]	[0.0042]
Mean Dep Var	4.50	4.57	4.48	4.59	4.57
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Firm-Size ≤ 4000					
Blue-Collar Representation	0.0056***	0.0134***	0.0059	-0.0098**	0.0125***
	[0.0019]	[0.0039]	[0.0039]	[0.0041]	[0.0040]
Mean Dep Var	4.50	4.57	4.48	4.59	4.57
N Obs.	73540	328875	13730	288144	328875
N Establishments	2188	16862	391	15351	16862
Panel C: Firm-Size ≤ 2000					
Blue-Collar Representation	0.0056***	0.0135***	0.0072*	-0.0062	0.0125***
	[0.0021]	[0.0038]	[0.0041]	[0.0039]	[0.0039]
Mean Dep Var	4.49	4.56	4.47	4.58	4.56
N Obs.	69464	315118	13178	276026	315118
N Establishments	2173	16614	391	15113	16614
Panel D: Firm-Size ≤ 1000					
Blue-Collar Representation	0.0051**	0.0122***	0.0115**	-0.0034	0.0107***
	[0.0024]	[0.0039]	[0.0046]	[0.0041]	[0.0040]
Mean Dep Var	4.48	4.54	4.46	4.56	4.54
N Obs.	55386	276303	10130	241587	276303
N Establishments	2084	15772	375	14292	15772
Panel E: Firm-Size ≤ 500					
Blue-Collar Representation	-0.0003	0.0191***	-0.0024	0.0034	0.0192***
	[0.0038]	[0.0045]	[0.0077]	[0.0052]	[0.0046]
Mean Dep Var	4.46	4.50	4.46	4.52	4.50
N Obs.	29010	201622	4782	175578	201622
N Establishments	1524	13350	255	12008	13350

Notes: The table presents robustness estimates of the effect of blue-collar representation on wages (50th percentile). All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A20: Effects on Wages (75th Percentile) – Varying Establishment Size Cutoffs

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Baseline (all Firm-Sizes)					
Blue-Collar Representation	0.0045***	0.0052	0.0040	-0.0106***	0.0049
	[0.0017]	[0.0032]	[0.0035]	[0.0036]	[0.0033]
Mean Dep Var	4.67	4.74	4.65	4.77	4.74
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Firm-Size ≤ 4000					
Blue-Collar Representation	0.0033*	0.0070**	0.0034	-0.0102***	0.0068**
	[0.0017]	[0.0032]	[0.0036]	[0.0037]	[0.0033]
Mean Dep Var	4.67	4.74	4.65	4.76	4.74
N Obs.	73540	328875	13730	288144	328875
N Establishments	2188	16862	391	15351	16862
Panel C: Firm-Size ≤ 2000					
Blue-Collar Representation	0.0036**	0.0104***	0.0067*	-0.0041	0.0101***
	[0.0018]	[0.0031]	[0.0036]	[0.0034]	[0.0032]
Mean Dep Var	4.66	4.73	4.64	4.75	4.73
N Obs.	69464	315118	13178	276026	315118
N Establishments	2173	16614	391	15113	16614
Panel D: Firm-Size ≤ 1000					
Blue-Collar Representation	0.0030	0.0090***	0.0088**	-0.0050	0.0083**
	[0.0022]	[0.0033]	[0.0044]	[0.0035]	[0.0034]
Mean Dep Var	4.66	4.71	4.64	4.74	4.71
N Obs.	55386	276303	10130	241587	276303
N Establishments	2084	15772	375	14292	15772
Panel E: Firm-Size ≤ 500					
Blue-Collar Representation	-0.0017	0.0156***	-0.0006	-0.0029	0.0164***
	[0.0035]	[0.0038]	[0.0078]	[0.0045]	[0.0039]
Mean Dep Var	4.64	4.68	4.64	4.70	4.68
N Obs.	29010	201622	4782	175578	201622
N Establishments	1524	13350	255	12008	13350

Notes: The table presents robustness estimates of the effect of blue-collar representation on wages (75th percentile). All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A21: Effects on Establishment Composition

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Size Works Council					
Blue-Collar Representation	0.6840***	0.1388	0.1190	0.4008	0.1310
	[0.2344]	[0.2404]	[0.1187]	[0.4316]	[0.2493]
Mean Dep Var	1.93	2.11	1.88	2.29	2.11
N Obs.	75120	251163	13810	175418	251163
N Establishments	2190	12637	391	9351	12637
Panel B: Firm-Size					
Blue-Collar Representation	50.7810	-5.0625	-6.3030	53.8560	6.2070
	[40.7307]	[129.8366]	[57.9543]	[65.7468]	[138.6054]
Mean Dep Var	958.30	730.33	917.70	740.38	730.33
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel C: Share Blue-Collar Workers					
Blue-Collar Representation	-0.0027*	0.0144***	-0.0024	-0.0076	0.0183***
	[0.0016]	[0.0050]	[0.0034]	[0.0047]	[0.0051]
Mean Dep Var	0.66	0.52	0.71	0.51	0.52
N Obs.	75118	336906	13810	295150	336906
N Establishments	2190	16962	391	15436	16962
Panel D: Share Highly Educated Workers					
Blue-Collar Representation	-0.0093**	-0.0602***	-0.0111	0.0150	-0.0657***
	[0.0043]	[0.0095]	[0.0088]	[0.0099]	[0.0097]
Mean Dep Var	0.08	0.15	0.06	0.15	0.15
N Obs.	75120	251163	13810	175418	251163
N Establishments	2190	12637	391	9351	12637
Panel E: Share Medium Educated Workers					
Blue-Collar Representation	0.0272***	0.0591***	0.0539***	-0.0387**	0.0667***
	[0.0090]	[0.0146]	[0.0192]	[0.0170]	[0.0151]
Mean Dep Var	0.78	0.77	0.78	0.77	0.77
N Obs.	75120	251163	13810	175418	251163
N Establishments	2190	12637	391	9351	12637
Panel F: Share Low Educated Workers					
Blue-Collar Representation	-0.0132*	0.0022	-0.0375**	0.0248*	0.0005
	[0.0079]	[0.0112]	[0.0173]	[0.0139]	[0.0116]
Mean Dep Var	0.13	0.08	0.15	0.07	0.08
N Obs.	75120	251163	13810	175418	251163
N Establishments	2190	12637	391	9351	12637
Increase Council Share	.462	1	.465	1	1

Notes: The table presents estimates of the effect of blue-collar representation on firm composition. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention-to-treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A22: Effects on Works Council Composition

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Council Age					
Blue-Collar Representation	-3.4325***	-3.2420***	-6.6704***	0.1907	-3.4031***
	[0.2058]	[0.2960]	[0.4856]	[0.4120]	[0.3046]
Mean Dep Var	49.92	51.47	49.81	51.56	51.47
N Obs.	75120	251163	13810	175418	251163
N Establishments	2190	12637	391	9351	12637
Panel B: Council Wage					
Blue-Collar Representation	-3.2008***	-1.6226*	-1.9153*	2.3108**	-1.8705*
	[0.4860]	[0.9578]	[1.0059]	[1.0391]	[0.9653]
Mean Dep Var	112.90	128.82	109.78	132.25	128.82
N Obs.	75120	251163	13810	175418	251163
N Establishments	2190	12637	391	9351	12637
Panel C: Council Share Female					
Blue-Collar Representation	-0.0249***	-0.0697***	0.0093	0.0116	-0.0700***
	[0.0066]	[0.0111]	[0.0126]	[0.0129]	[0.0113]
Mean Dep Var	0.15	0.20	0.14	0.19	0.20
N Obs.	72686	292154	13430	226736	292154
N Establishments	2190	14456	391	11901	14456
Panel D: Council Share Non-Germans					
Blue-Collar Representation	0.0053*	0.0123***	0.0133**	0.0037	0.0115***
	[0.0028]	[0.0041]	[0.0061]	[0.0055]	[0.0041]
Mean Dep Var	0.02	0.02	0.02	0.02	0.02
N Obs.	72686	292154	13430	226736	292154
N Establishments	2190	14456	391	11901	14456
Panel E: Council Share Medium Educated Workers					
Blue-Collar Representation	0.0305***	0.0609***	0.0297	-0.0134	0.0666***
	[0.0092]	[0.0149]	[0.0186]	[0.0172]	[0.0153]
Mean Dep Var	0.74	0.71	0.74	0.72	0.71
N Obs.	72686	292154	13430	226736	292154
N Establishments	2190	14456	391	11901	14456
Increase Council Share	.462	1	.465	1	1

Notes: The table presents estimates of the effect of blue-collar representation on the works council composition. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A23: Effects on Turnover - Controlling for Works Council Composition

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Involuntary Exits					
Blue-Collar Representation	-0.0070***	-0.0034	-0.0093**	-0.0053*	-0.0024
	[0.0021]	[0.0024]	[0.0040]	[0.0029]	[0.0025]
Mean Dep Var	0.08	0.12	0.08	0.12	0.12
N Obs.	72686	313508	13430	275449	313508
N Establishments	2190	15856	391	14540	15856
Panel B: Voluntary Exits					
Blue-Collar Representation	0.0009	-0.0014	0.0020	-0.0000	-0.0010
	[0.0008]	[0.0033]	[0.0026]	[0.0039]	[0.0033]
Mean Dep Var	0.01	0.02	0.01	0.02	0.02
N Obs.	71789	313508	13289	275449	313508
N Establishments	2190	15856	391	14540	15856
Panel C: Exits on the Extensive Margin (Establishment Closures)					
Blue-Collar Representation	-0.0021***	0.0037	-0.0012	0.0040	0.0040
	[0.0007]	[0.0029]	[0.0015]	[0.0032]	[0.0030]
Mean Dep Var	0.00	0.05	0.00	0.05	0.05
N Obs.	72686	313508	13430	275449	313508
N Establishments	2190	15856	391	14540	15856
Increase Council Share	.462	1	.465	1	1

Notes: The table presents estimates of the effect of blue-collar representation on turnover controlling for the composition of the works council. We control linearly for: mean age of council members, mean daily gross wage of works council members, the share of females and the share of non-Germans on the works council. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A24: Effects on Wages - Controlling for Works Council Composition

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event (1)	IV (2)	Event (3)	DiD-IV (4)	ITT-IV (5)
Panel A: Log-Wage 10th Percentile					
Blue-Collar Representation	0.0089***	0.0262***	-0.0007	-0.0098	0.0259***
	[0.0031]	[0.0072]	[0.0062]	[0.0064]	[0.0073]
Mean Dep Var	4.12	4.19	4.11	4.20	4.19
N Obs.	72686	313508	13430	275449	313508
N Establishments	2190	15856	391	14540	15856
Panel B: Median Log-Wage					
Blue-Collar Representation	0.0066***	0.0168***	0.0025	-0.0118***	0.0159***
	[0.0021]	[0.0044]	[0.0047]	[0.0045]	[0.0044]
Mean Dep Var	4.49	4.58	4.47	4.60	4.58
N Obs.	72686	313508	13430	275449	313508
N Establishments	2190	15856	391	14540	15856
Panel C: Log-Wage 75th Percentile					
Blue-Collar Representation	0.0059***	0.0082**	0.0023	-0.0139***	0.0078**
	[0.0018]	[0.0033]	[0.0040]	[0.0040]	[0.0034]
Mean Dep Var	4.67	4.75	4.64	4.77	4.75
N Obs.	72686	313508	13430	275449	313508
N Establishments	2190	15856	391	14540	15856
Increase Council Share	.462	1	.465	1	1

Notes: The table presents estimates of the effect of blue-collar representation on wages controlling for the composition of the works council. We control linearly for: mean age of council members, mean daily gross wage of works council members, the share of females and the share of non-Germans on the works council. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance at the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference-in-difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient estimates for an intention to treat IV, where the threshold of crossing retirement age (becoming 63 and older) is used instead of actual retirement exits.

Table A25: Effects of Blue-Collar Representation for Alternative Turnover Definitions

	Baseline Specifications		Retirement-Induced	Alternative IV Specifications	
	Event	IV	Event	DiD-IV	ITT-IV
	(1)	(2)	(3)	(4)	(5)
Panel A: Non-Permanent Involuntary Exits					
Blue-Collar Representation	-0.0030***	0.0004	-0.0018	-0.0003	0.0008
	[0.0009]	[0.0012]	[0.0012]	[0.0014]	[0.0013]
Mean Dep Var	0.00	0.01	0.00	0.01	0.01
N Obs.	75120	337059	13810	295459	337059
N Establishments	2190	16986	391	15476	16986
Panel B: Involuntary Exits - Balanced Panel					
Blue-Collar Representation	-0.0078***	-0.0036**	-0.0143***	-0.0065***	-0.0028*
	[0.0022]	[0.0015]	[0.0048]	[0.0022]	[0.0015]
Mean Dep Var	0.08	0.08	0.08	0.08	0.08
N Obs.	32842	256641	6486	209014	256641
N Establishments	845	11455	166	9792	11455
Increase Council Share	.462	1	.465	1	1

Notes: This table presents robustness estimates of the effect of blue-collar representation on turnover for alternative turnover definitions. All estimates are based on event-study and retirement-IV specifications as outlined in the text. Standard errors (clustered at the event level) in parenthesis. *, ** and *** refer to significance on the 10%, 5% and 1% significance level. Columns (1) and (2) represent baseline results for event-study and IV specification respectively. Column (3) restricts to retirement-induced events for the event-study specification. Column (4) employs a difference in difference type IV that estimates effects relative to 4 years before the event. Column (5) shows coefficient for an intention to treat IV, where instead of actual retirement exits the threshold of crossing retirement age (becoming 63 and older) is used.

Table A26: Summary IEB – Characteristics of Works Council Membership

	(1) Mean	(2) SD	(3) P25	(4) Median	(5) P75
Panel A: Full-Time Representatives - Full Sample					
Age at Entry, years	44.17	10.65	36	45	52
Tenure at Entry, years	8.03	8.48	1	4	13
Experience at Entry, years	15.18	11.29	4	14	24
Years in Works Council	8.44	6.06	4	7	12
Number of Election Periods in Works Council	2.42	1.59	1	2	3
I: At Least 2 Election Periods in Works Council	0.65	0.48	0	1	1
Years in Establishment after leaving Works Council	0.70	2.75	0	0	0
Years working after leaving Works Council	4.56	7.22	0	0	8
N	46435				
Panel B: Full-Time Representatives - Matched Life-Cycle Sample					
Age at Entry, years	43.55	7.94	38	43	49
Tenure at Entry, years	11.60	5.68	7	10	15
Experience at Entry, years	16.48	6.80	11	16	21
Years in Works Council	11.92	7.45	5	11	16
Number of Election Periods in Works Council	3.27	1.97	2	3	5
I: At Least 2 Election Periods in Works Council	0.76	0.43	1	1	1
Years in Establishment after leaving Works Council	0.93	3.27	0	0	0
Years working after leaving Works Council	5.09	7.01	0	1	8
N	3614				
Panel C: Full-Time Reps - Matched Life-Cycle Sample + Balance Restriction					
Age at Entry, years	41.57	6.37	37	42	46
Tenure at Entry, years	12.13	5.59	7	11	16
Experience at Entry, years	16.54	6.28	12	16	21
Years in Works Council	14.26	7.34	8	14	20
Number of Election Periods in Works Council	3.81	1.97	2	4	5
I: At Least 2 Election Periods in Works Council	0.84	0.37	1	1	1
Years in Establishment after leaving Works Council	1.18	3.70	0	0	0
Years working after leaving Works Council	5.73	7.34	0	2	10
N	2373				

Notes: This table shows summary statistics for professional worker representatives observed in the IEB data. We impute works council membership on the election-period level: everyone with at least one membership spell in an election-period is counted as a member for the whole period. Panel A reports summaries for the complete sample, while Panel B focuses on the sub-sample of matched representatives used for analyzing career effects (Figure 7). Panel C further restricts to the sub-sample with non-zero wages in a window around the entry year (5 years before until 10 years after). Due to censoring – social security records are available from 1975 only – experience and tenure should be viewed as a lower bound.