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Collective Bargaining in Germany:

Trends and Challenges

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Abstract: This paper examines the evolution, institutional structure, and current challenges of collective bargaining in Germany. Collective bargaining addresses labor market imperfections, redistributes productivity gains, and shapes working conditions. The German system is centered on industry-level agreements, complemented by firm-level agreements and voluntary adoption of industry-level bargaining outcomes by formally uncovered firms ("orientation"). It has historically supported cooperative labor–management relations, while allowing for flexibility during economic downturns. We document long-term declines in union density and bargaining coverage, partly mitigated by orientation. Moreover, coverage is lower among low-wage workers. We conclude by discussing the future of Germany's collective bargaining institutions in the context of structural economic change and the growing role of the statutory minimum wage, and draw comparison between Germany and the US.

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1.Introduction

A central challenge for modern economies is to ensure that the gains from productivity growth are broadly shared across the workforce. In a perfectly competitive labor market, wages are determined by supply and demand, and workers are paid their marginal product, that is, their contribution to output. In practice, however, labor markets deviate from perfect competition due to frictions, including search costs, skill mismatches, monopsony power, and incomplete information.

Two key institutions have emerged to mitigate the resulting imbalances in wage determination: minimum wages and collective bargaining. Minimum wages aim to protect low-income workers, while collective bargaining seeks to rebalance bargaining power between workers and employers and promote redistribution through wage negotiations. Both institutions are widely used, but their relative importance differs across countries. Some economies rely primarily on minimum wages, such as the United States, where today only one in ten workers is covered by collective bargaining. Others operate collective bargaining systems without a statutory minimum wage, as in Italy or Germany prior to 2015. Still others, including Germany today, combine both institutions.

This paper begins by outlining the economic rationale for labor market institutions, emphasizing how they address frictions in imperfect labor markets and contribute to a more equitable distribution of productivity gains. Section 2 develops the theoretical foundations of collective bargaining and contrasts its key features with minimum wage policy. We review standard models, including monopoly union and Nash bargaining frameworks, and discuss their limitations, especially in the presence of worker heterogeneity, monopsony power, and insider–outsider dynamics. We also explore how collective agreements affect working conditions, investment incentives, and the resolution of workplace conflicts.

Section 3 turns to the institutional structure and historical evolution of collective bargaining in Germany. We describe the dual system of industry-level and firm-level agreements, the role of works councils, and the legal framework governing collective bargaining coverage. We also document trends in union membership and coverage, and the relationship between coverage by collective agreements wages, working hours, gender inequality, as well as vocational training.[2] We also add some novel evidence on the coverage by works councils.

We then assess the strengths and weaknesses of the German model. On the one hand, it allows for coordinated adjustment and institutional flexibility. On the other hand, it faces challenges from declining coverage, rising wage inequality, and the increasing role of the statutory minimum wage introduced in 2015. Importantly, the influence of collective bargaining extends beyond formally covered firms and workers through firm-level *orientation,* whereby uncovered firms voluntarily adopt key elements of industry-level collective agreements. In many cases, such practices become binding through their incorporation into individual labor contracts. At the same time, orientation allows firms discretion in implementation, including the option not to adopt all provisions or subsequent negotiated changes. Recent evidence suggests that, once orientation is taken into account, the decline in formal coverage strongly overstates the erosion of collective bargaining in the private sector.

Finally, we contrast the German model with the more decentralized and adversarial system in the United States. We highlight the consequences of firm-level bargaining, declining unionization, and weaker institutional coordination, and discuss the broader implications for labor market outcomes. The paper concludes by considering the future of collective bargaining in Germany in light of current economic challenges, including pressures facing on the manufacturing sector and the potential further erosion of coordinated wage-setting institutions.

[2] Recent work by Claus Schnabel (2025) documents several of these trends.

2. Collective Bargaining: General Considerations and Theoretical Insights

2.1 General Considerations

While the minimum wage is a straightforward and broad tool for redistribution, primarily targeting workers at the lower end of the wage distribution, collective bargaining systems are considerably more complex. In principle, collective bargaining agreements apply to all eligible (covered) workers, although negotiations tend to focus on the pay of those in the low- and medium-wage segments. Eligibility depends on several factors, including a worker's willingness to be represented by a union (typically through union membership) and a firm's readiness to engage in negotiations and honor the resulting agreements.

Collective bargaining systems also allow for differentiation in wage outcomes across regions, industries, and occupations, accommodating productivity differences through sub-negotiations along these dimensions. While unions often lead these negotiations, they frequently collaborate with works councils at the establishment level.[3] There is also overlap: although formally independent of unions, most works councils not only include union members but many of those members (especially in large firms) also have influential roles in the union.

Unlike the minimum wage, which is inherently tied to political decisions, collective bargaining can, in principle, operate autonomously without direct government intervention. Negotiations occur between employer associations and unions, providing the system with flexibility to adapt to economic shocks. This independence is a key strength. However, its effectiveness hinges on trust between employers and unions. A fundamental challenge arises from time inconsistency:

[3] A works council is a firm-level body of elected employee representatives with legally defined rights to information, consultation, and codetermination on workplace issues such as working conditions, hours, personnel policies as well as strategic decisions such as restructuring of the firm or the introduction of new technologies.

unions may agree to moderate wage demands during downturns in exchange for future gains, but such commitments rely on long-term trust.

There are also more profound differences between collective bargaining and systems that rely primarily on the minimum wage. One important distinction lies in the level of communication between workers and management. Works councils, often composed of union members, are typically not opposed by firms because they help coordinating company policies with the workforce even though the existence of works councils is likely to reduce the firms' monopsonistic power. These institutions help reduce conflict and foster cooperation. Strong relationships between management and worker representatives also enable valuable feedback from the shop floor, supporting workplace improvements such as enhanced safety and efficiency through organizational and technological innovations.

The benefits of institutions that promote communication between workers and firms are often overlooked in countries without such systems. A notable example is Volkswagen's 2014 attempt to establish a German-style works council at its Chattanooga plant in the United States, which encountered legal and political resistance. U.S. law requires union representation for such councils, and despite Volkswagen's support, the United Auto Workers' unionization vote failed amid opposition from business groups and Republican politicians. This episode illustrates the difficulties of adapting European labor models to the U.S. context. Similar tensions have recently surfaced between Tesla's management in Sweden and Germany and labor representatives.

2.2 Theoretical Insights

2.2.1 The Basic Microeconomic Model

Standard microeconomic theory of collective bargaining emphasize a trade-off between wages and employment (MacDonald and Solow, 1985; Pencavel, 1991). In the basic framework, union

utility $U(w, E)$, is increasing in both wage w and employment E, while firms profits, $\Pi(w, E)$, are increasing in employment and decreasing in wages.

A general framework is provided by the Nash bargaining model, in which the wage-employment outcome results from maximizing a weighted product of union and employer surpluses:

(1) $max\left[(U(w,E) - U_0)^{\alpha} \cdot (\Pi(w,E) - \Pi_0)^{\{1-\alpha\}}\right]$,

where U_0 and Π_0 denote disagreement payoffs and $\alpha \in [0,1]$ reflects the union's bargaining power (Pencavel 1991).

The literature typically distinguishes between two canonical cases. In the right-to-manage model, bargaining determines the wage, while firms choose employment unilaterally in response to the bargained wage. Employment is thus given by the firm's labor demand function, where the firm chooses employment E to maximize profits $\Pi(w, E)$, conditional on the negotiated wage, w^n:

$$E(w^n) = argmax_E \Pi(w^n, E).$$

In the efficient bargaining model, wages and employment are jointly determined, yielding Pareto-efficient outcomes with employment typically exceeding the level implied by the firm's labor demand at the negotiated wage. Such outcomes, however, may be difficult to sustain, as firms have an ex-post incentive to adjust employment along the labor demand curve.

The monopoly union model is a special case of the right-to-manage model where all bargaining power lies with the union, that is, $\alpha = 1$. The union sets wages anticipating the firm's labor demand response.

Across these models, unions are willing to trade off higher wages against lower employment. An outward shift in labor demand increases both wages and employment, with the extent of

wage adjustment relative to employment growth depending on the weight placed on wage and employment in the union preferences and the elasticity of labor demand.

Standard models abstract from several important dimensions of real-world labor markets. We discuss these limitations next.

2.2.2 Limitations: Heterogeneity and Monopsony

The basic model abstracts from worker heterogeneity, wage inequality, and the interests of non-employed workers. This latter omission relates to the insider–outsider literature,[4] which emphasizes that unions may primarily represent incumbent workers, while neglecting outsiders. The framework also treats firms as homogeneous, overlooking institutional heterogeneity—for example, the coexistence of industry-level agreements, firm-level bargaining, and firm-level "orientation" toward collective agreements in Germany.[5]

Another limitation is the absence of monopsony power (Manning 2021; Booth, 2014; Fitzenberger, 2014). In labor markets where firms have wage-setting power, collective bargaining can raise wages above monopsonistic levels, and thus induce positive employment effects, similar to minimum wages (Dustmann et al. 2022). Similarly, collective agreements counteract monopsony power of firms.

[4] The classic insider–outsider theory of Assar Lindbeck and Dennis Snower (2001) posits that employed insiders can bargain for wages above the market-clearing level without being easily replaced. While unemployed outsiders may be willing to work for less, they cannot fully underbid insiders because replacing incumbent workers is costly and disruptive. Mikael Carlsson et al. (2026) document a substantial decline in the responsiveness of wages to regional unemployment (the wage curve) in Sweden. The authors interpret these findings as evidence that labor supply changes do not exert downward pressure on insider wages.

[5] The literature describes "orientation" as the voluntary recognition of collective bargaining agreements by firms, although this term does not fully capture the concept. Orientation can be interpreted as partial coverage with fewer constraints: firms may be contractually bound to follow some provisions of sectoral agreements, while retaining flexibility in others. In particular, firms are often not required to adopt future agreements or apply provisions to new hires. When new agreements involve substantial wage increases, firms may choose not to adopt them while continuing to adhere to earlier terms. Evidence summarized by Schnabel (2025) shows that oriented firms pay higher wages than comparable uncovered firms but lower wages than formally covered firms. While orientation is a distinctive feature of the German system, similar mechanisms arise elsewhere through the union-threat effect.

Empirically, collective bargaining is generally associated with lower wage inequality (Dustmann and Schönberg 2009, Fitzenberger et al. 2013, Jäger et al. 2026). This effect operates primarily through wage floors, which compress the wage distribution when workers differ in productivity or when equally productive workers are paid differently due to employer wage-setting power. Wage equalization often reflects uniform wage floors across firms, even though a rent-maximizing union might prefer differentiated wages, analogous to a price-discriminating monopolist in product markets. At the same time, firms covered by industry-level agreements may pay wages above the contractual minimum, generating wage cushions (or wage drift) (Fitzenberger et al., 2013). Similar to spillovers in the minimum wage literature, such practices may partially offset wage compression of collective agreements.[6]

Theoretical accounts differ on the types of union preferences that rationalizes their emphasis on wage equality, relative to the outcomes that would prevail in the absence of collective bargaining (Oswald 1982, Pencavel 1991, Freeman and Medoff 1994).[7] A common wage floor for observationally similar workers reduces within-group wage dispersion and need not reduce employment if worker productivity exceeds the wage floor or if workers relocate toward more productive firms. However, if wage floors lead to job loss and reduced incomes for displaced workers, overall (income) inequality may increase. Despite this possibility, the literature overwhelmingly concludes that collective bargaining reduces wage inequality (Jäger et al.

[6] A wage cushion is also observed in other European countries (see, e. g., Cardoso and Portugal 2005).

[7] One line of argument assumes that unions maximize the expected utility of a representative, risk-averse member (Oswald 1982). More generally, unions may be modeled as maximizing a social welfare function over their membership that reflects aversion to inequality. This perspective can be rationalized from an ex ante viewpoint under a veil-of-ignorance framework, in which individuals make decisions without knowing their future position in the income distribution. Such an approach aligns with normative notions of fairness in the labor market, including the principle of equal pay for equal work. However, this perspective abstracts from the institutional reality of union representation. Unions act on behalf of their members, and their objectives are shaped by the preferences of this specific constituency. Modeling unions as maximizing expected utility or a broad social welfare function may therefore understate the importance of membership composition and the self-interested motivations of insiders.

2025, Antonczyk et al. 2010, Dustmann et al. 2014), although credible causal evidence remains limited.

2.2.3 Working Time and Working Conditions

Collective bargaining extends beyond the determination of wages and employment to working conditions and workplace rules. Agreements typically specify wage schedules across job types and qualification levels, as well as occupational safety standards. Workers value such protections, and firms may share this interest when improved conditions raise productivity or reduce absenteeism.

A traditional union objective is the reduction of standard working time (see Section 3 for the case of Germany). During periods of economic growth, workers may prefer shorter hours over higher income. In downturns, unions may advocate reduced hours to preserve employment.

While standard working time primarily applies to full-time employment, firms often retain greater discretion in settings with widespread part-time work. In such cases, unions may bargain over scheduling predictability, rest periods, and protections against excessive hours.

2.2.4 Bargaining Power, Free Riding, and Spillovers

Union bargaining power, captured by α in equation (1), depends on factors such as membership size, financial resources, and employers' ability to endure work stoppages. In the classical framework of Hicks (1932), strike outcomes depend on the ability of unions and firms to sustain industrial conflict.

Both unions and employers' associations face free-rider problems. Non-union workers benefit from negotiated agreements, such as higher wages or better working conditions. Firms that are not members of an employers' association may adopt elements of collective agreements without contributing to the bargaining process or being subject to its constraints.

Collective agreements may also create spillovers to uncovered firms. Firms may raise wages to deter unionization (the union-threat effect) or to retain workers who might otherwise move to covered firms. As a result, industry-level agreements can influence labor market outcomes beyond formally covered workers. Firm-level orientation toward industry agreements in Germany is a prominent example.

2.2.5 Exit, Investment, and Flexibility

The voice-versus-exit framework of Freeman and Medoff (1984) highlights that dissatisfied workers can either leave the firm or voice their concerns and attempt to negotiate better conditions. Exit is costly for firms due to the loss of firm-specific human capital and previous investments. Collective bargaining provides an institutionalized mechanism for "voice", which can improve retention and productivity.[8]

Collective agreements may also affect investment incentives. A hold-up problem may arise ex post: once an investment is in place, indispensable workers ("insiders") at the firm level may seek to appropriate part of the resulting rents, thereby lowering expected returns and weakening firms' ex ante incentives to invest. Firm-level agreements can reduce uncertainty about future wages if they serve as commitment devices that facilitate worker cooperation. By guaranteeing workers a share of future rents, such agreements may mitigate hold-up problems and encourage investment.

Industry-level agreements have different implications. Because wages are set at the industry level, firm-specific productivity gains from investment are not automatically shared through firm-level wage bargaining, potentially limiting ex post rent extraction. Hence, in principle, industry-level agreements are less prone to hold-up problems than firm-level bargaining. However, wage cushions in practice may attenuate this effect, making the overall impact on

[8] In Germany, a similar argument applies to codetermination rights, in particular those exercised by elected works councils and worker representatives on the supervisory boards of large corporations.

investment incentives an empirical question. This argument relies on the assumption that the wage cushion does not increase one-for-one with workers' ability to extract rents at the firm level—that is, an expanding wage cushion does not fully offset the wage-equalizing effect of industry-level agreements.

Collective bargaining can also promote firm-sponsored training by compressing wage differentials (Dustmann and Schönberg, 2009, building on Acemoglu and Pischke, 1999). In their framework, unionized firms offer long-term wage contracts that guarantee workers at least the union wage in the future. While non-union firms could, in principle, offer similar contracts, such commitments may lack credibility. Unions, therefore, act as a commitment device, ensuring that workers receive a share of future returns. This strengthens firms' incentives to invest in training and can improve overall welfare. More generally, collective agreements that guarantee wage progression following training support investment in general human capital.

Finally, collective agreements can facilitate flexibility in downturns. While industry agreements set uniform wage floors, opening clauses (or hardship clauses) allow temporary deviations at the firm level. These clauses enable firms to adjust wages or working time in response to shocks while preserving the long-term structure of the agreement (Dustmann et al., 2014).

3. Collective Bargaining in Germany

3.1 The German System of Collective Bargaining

According to the German Collective Bargaining Act (Tarifvertragsgesetz), collective agreements are legally binding for an employment relationship if the employer is a member of an employers' association and the worker is a union member. In practice, however, their scope extends beyond formally organized parties. Negotiated outcomes typically apply not only to union members but also to a broader set of employees, even in the absence of a legal obligation.

As a result, collective bargaining coverage in Germany substantially exceeds union density, largely due to voluntary employer recognition. Three wage-setting regimes coexist. First, the majority of employees are covered by industry-level agreements negotiated at the sectoral level. Covered firms may pay wages above the contractual minimum in line with the favorability principle (OECD 2004: 154), generating a "wage cushion" (or wage drift). Government extensions of industry-level agreements also fall into this category.

Second, a smaller share of employees is covered by firm-level agreements, which apply only within a single firm (hereafter "firm-level agreements"). In Germany, firm-level and industry-level bargaining are mutually exclusive rather than hierarchical.

Third, a substantial share of employees is not formally covered by any agreement. Even within this group, however, many firms exhibit "orientation" toward the industry-level agreement, voluntarily adopting key provisions without being formally bound.

Collective agreements in Germany cannot grant wage premia exclusively to union members, reflecting the constitutional principle of freedom of association, including the right not to join a union ("negative Koalitionsfreiheit"). This also implies that there is no political influence on unions and employers' associations, which formally are politically independent institutions and operate independently of the state. At the same time, the government may extend industry-level agreements to all firms within a sector, although this instrument is used less frequently than in countries with similar institutions, such as the Netherlands or Switzerland (Günther and Höpner, 2023). Public procurement rules may also require compliance with collective agreements.

3.2 History and Union Structure

Modern collective bargaining in Germany originates in the Stinnes–Legien Agreement,[9] concluded in November 1918, which established three key principles: (i) recognition of trade unions as bargaining partners, (ii) introduction of the eight-hour working day, and (iii) a commitment to conduct bargaining at the industry level. Although negotiated without direct state involvement, such agreements were effectively recognized by the state until the end of the Weimar Republic.

After World War II, collective bargaining at the industry and regional level became the dominant institutional arrangement. Pattern bargaining emerged as a key feature, with an agreement for a specific industry and region serving as a benchmark for others. For a long period in West Germany, collective agreements in the metal industry were first negotiated in the highly industrialized state of Baden-Württemberg, and subsequently adopted by other regions.

The German constitution guarantees the autonomy of collective bargaining. Industry unions became the dominant organizational form, including IG Metall (metalworkers), IG Bergbau und Chemie (chemical and mining workers), and later ver.di (public sector services), all operating under the umbrella of the German Trade Union Confederation (DGB). While historically aligned with parties such as the Social Democratic Party (SPD) and the labor wing of the conservative CDU/CSU, the DGB emphasizes its political independence.

3.2.1 Shifting Priorities

Union bargaining priorities have evolved over time. From the 1950s through the 1980s, reductions in working time were a central demand, including the transition to a five-day

[9] The Stinnes–Legien Agreement was concluded in November 1918 between representatives of German industrial employers, led by Hugo Stinnes, and trade unions, led by Carl Legien.

workweek and an eight-hour workday. These efforts continued in the 1960s with an added focus on longer holidays. During periods of economic expansion in the 1960s and early 1970s, unions also emphasized wage growth in line with productivity. In the 1980s, reductions in working time were increasingly used to distribute work more evenly amid rising unemployment.

Since the 1970s, union membership and employer association coverage have declined steadily (see Table 1). Rising unemployment since the 1970s and increasing wage inequality since the 1990s (Dustmann et al., 2009) weakened collective bargaining coverage, especially by industry-level agreements. Free-rider problems have been central: non-union workers benefit from collectively bargained agreements without contributing to union activities, and firms may adopt elements of agreements without formal participation.[10]

In the 2000s and 2010s, greater heterogeneity in work preferences, driven in part by rising female labor force participation and the expansion of part-time work, led unions and works councils to negotiate more flexible working-time arrangements. Pay structures linked to hours worked became more common, reflecting a shift away from a traditional focus on full-time employment.

3.2.2 Craft Unions and Fragmentation

A further development has been the rise of occupation-specific "craft" unions (Pencavel 1991), such as the Locomotive Drivers' Union (GdL), the Flight Security Union (GdF), and the Hospital Doctors' Union (Hartmannbund). These unions represent highly skilled workers and often possess substantial bargaining power because they can disrupt essential services. Strikes

[10] Employers' associations offer bargaining-free membership to retain firms that prefer not to be bound by all provisions of industry-level agreements (Schnabel 2025).

by these groups have become more frequent, notably since privatization reforms in the 1990s granted them the right to strike.[11]

3.2.3 Institutional Flexibility

Despite declining membership and coverage, the German system of industrial relations has shown considerable flexibility. During the competitiveness crisis and rising unemployment around the turn of the century, wage moderation and institutional reforms allowed firms to adjust. Collective agreements increasingly incorporated opening clauses, enabling firm-level deviations in wages, working hours, and work organization (Dustmann et al., 2014). Unions agreed to "opening clauses" that allowed firms under economic stress to adjust conditions to avoid layoffs. Many firms also relied on internal flexibility, such as working-time accounts, to reduce labor costs without layoffs, while wage cushions provided an additional buffer.

Works councils played a key role in these adjustments, as their approval is typically required for changes in working hours, pay, or workplace organization. This combination of centralized coordination and decentralized flexibility helped firms, particularly in manufacturing, to improve productivity and contributed to Germany's recovery in 2006–07 and again after the global financial crisis (Dustmann et al., 2014; Bellmann et al., 2016).

However, the erosion of coverage by industry-level agreements, particularly among smaller low-wage firms, contributed to policy efforts to limit the expansion of the low-wage sector.[12] Sector-specific minimum wages were introduced in the 2000s and early 2010s, culminating in the adoption of a statutory minimum wage in 2015. Prior to this, Germany had no economy-

[11] The state-owned German rail company was transformed into a private corporation in 1994. Prior to this reform, most employees were lifetime civil servants without the right to strike. New hires after privatization no longer held this status and thus gained the right to strike, even though the company remains publicly owned. In contrast, the vast majority of public school teachers in Germany remain lifetime civil servants without the right to strike. This stands in sharp contrast to the United States, where unionization among teachers remains relatively strong.

[12] Real wages at the lower end of the wage distribution declined markedly up to 2010, both in covered and uncovered sectors (Antonczyk et al. 2010; Dustmann et al. 2014).

wide minimum wage, apart from the construction sector (Fitzenberger et al., 2013). While wages and working conditions had historically been regulated through collective bargaining, the introduction of a national minimum wage, set by a commission of union and employer representatives and enacted by the government, marked a significant expansion of state control.

4. Union Membership and Bargaining Coverage: Trends and Empirical Patterns

4.1 Union Membership and Coverage

Most union members in Germany belong to unions affiliated with the German Trade Union Confederation (DGB), which had about 5.6 million members in 2024 across eight unions (see Table A.1). The largest are Metalworkers' Union (IG Metall) and the United Services Union (ver.di).

Other unions operate outside the DGB. The German Association of Public Servants (Deutscher Beamtenbund, DBB) includes a more diverse group of unions. It represents civil servants (Beamte) in the public sector who typically hold lifetime positions and are not allowed to strike. Smaller unions, such as the Locomotive Drivers' Union (GdL), are not part of the DGB and bargain independently, often at the firm level. At the same time, the Railway and Transport Union (EVG), which represents most railway workers, is part of the DGB, as is the Police Union (GdP), although representing many civil servants with lifetime tenure. These examples show that, in some segments, there is competition between unions, both within firms and across different occupations. A prominent example concerns the competition between the EVG and the GdL in the rail sector, where workers can join either union, and the majority union at the establishment level negotiates the agreement.

More broadly, worker representation is contestable: workers may leave unions, join alternative unions, or elect works councils that are not necessarily aligned with the union responsible for the relevant industry-level bargaining agreement of the firm.

For the analysis of the evolution of union membership, we focus on DGB-affiliated unions, which dominate collective bargaining and have the legal authority to call strikes. Union density has steadily declined over time (see Table 1): from 41 percent in 1950 to 29 percent in 1990, followed by a brief increase after reunification in 1991 and a subsequent decline to 13 percent in 2024 (see also Schnabel, 2025).[13]

Union density is often seen as an indicator of bargaining power (Fitzenberger et al., 2013), for instance, in the United States. However, in Germany, it does not directly map into coverage by collective bargaining agreements, as we discuss in section 3.1.

4.1.1 Coverage by Collective Agreements

Collective bargaining coverage, defined as the share of employees whose wages and working conditions are governed by a collective agreement, substantially exceeds union density. In 2000, coverage (by either industry-level or firm-level agreements) was 68 percent of employees, declined steadily to 49 percent by 2023 (see Figure 1, based on the IAB Establishment Panel).[14] The decline is concentrated in the private sector, where coverage fell to 35 percent by 2023, compared to 83 percent in public administration (Table 2, panel a).

[13] The literature attributes this decline to a combination of compositional shifts and changes in workers' propensity to join unions. These include the contraction of traditional union strongholds and difficulties in organizing groups with relatively low membership rates, such as younger, white-collar, and atypical workers. OECD evidence suggests that changes in workforce composition—such as shorter job tenure and a higher incidence of temporary employment—account for only a modest share of the decline, leaving a substantial residual consistent with broader changes in worker preferences, union organizing capacity, and the institutional environment of representation (OECD 2019; Schnabel 2025).

[14] Since 1996, the IAB Establishment Panel has collected annual data on collective bargaining and works councils across all industries and firm size classes. Since 1999, it has also recorded whether establishments voluntarily follow industry-level collective agreements.

Coverage has declined less sharply than union membership. Between 2000 and 2024, union density fell by 41 percent (see Table 1), while coverage declined by 28 percent (Figure 1). As a result, the gap between the two has widened since 2000. This divergence is even more striking given that union membership figures include non-employed individuals, such as retirees and job seekers.

Coverage by an industry-level collective agreement depends on whether a firm formally recognizes a collective agreement. Figure 1 shows that the share of covered establishments (employers) has declined more rapidly in relative terms than the share of covered employees, while the absolute decline of about 20 percentage points is the same for both. Between 2000 and 2023, establishment coverage fell from 44 to 24 percent (a 45 percent relative decline), compared to a 29 percent decline in employee coverage. The pattern indicates increasing concentration of collective bargaining among larger firms, while smaller firms, which typically offer lower wages, have disproportionately exited the system.

Several factors may explain the decline in private-sector coverage, including rising firm heterogeneity, increased demand for flexibility in competitive environments (especially in industries with increasing import competition), and structural shifts towards sectors with lower coverage rates. However, most of the decline cannot be attributed to a single factor (Schnabel 2025).[15]

4.1.2 Coverage, Firm-Level Orientation, and Operational Agreements

The decline in formal coverage overstates the weakening of collective bargaining. Many uncovered firms continue to use collectively bargained wages as a reference point, whether to deter unionization, attract workers, or comply with extended agreements (Fitzenberger et al.,

[15] Baumgarten and Lehwald (2019) show that increased import exposure raised the likelihood that German plants exit industry-level bargaining agreements, accounting for about one-fifth of the overall decline in coverage in the manufacturing sector between 1996 and 2008.

2013).[16] At the same time, firms that voluntarily apply a collective agreement are not bound by all provisions, including the option not to implement future negotiated changes or to apply agreements selectively, while avoiding formal membership in an employers' association.

Survey evidence indicates that roughly half of formally *uncovered* establishments align wages with the relevant industry-level agreement (firm-level orientation). When such firms are included, overall coverage, defined as formal coverage plus orientation, rises substantially (see Table 2, panel a). In 2023, effective coverage reaches 68 percent of employees, compared to 42 percent under formal coverage alone. The gap is particularly pronounced in the private sector, where coverage increases from 35 to 60 percent when orientation is taken into account. Coverage remains higher in the public sector than in the private sector, and higher in West Germany than in East Germany. Orientation plays only a minor role in the public sector (1.5 percent) and is similar across West and East Germany (26 percent vs. 25 percent).

At the establishment level, the gap is even more pronounced (Table 2, panel b). While only 22 percent of establishments are formally covered by industry agreements, this share rises to 52 percent when establishments that report orientation are included. Orientation is especially prevalent among smaller establishments.

Coverage varies across industries (Table A.2). Outside the public sector, it is relatively high in manufacturing but low in most private service sectors. In addition, around 10 percent of establishments are not formally covered by a collective agreement but apply operational agreements (Betriebsvereinbarung), negotiated with works councils. These agreements often replicate elements of industry-level bargaining while allowing greater firm-level flexibility, but, unlike collective agreements, they do not establish binding wage floors.

[16] One mechanism is to incorporate a reference to a collective agreement into the individual employment contract.

4.2 Conflict Resolution, Working Time, and Inequality

Collective bargaining aims to reconcile the interests of employers and employees. Efficient bargaining is typically associated with limited frictions, as reflected in low strike activity and infrequent reliance on arbitration. At the same time, industrial action may be necessary to signal credible bargaining power.

Between 2002 and 2023, Germany recorded an average of 18 strike days lost per 1,000 employees annually, placing it in the lower half of industrialized countries. This is well below levels in Belgium (103), France (93), Finland (90), and Canada (83) (Figure 2). Even relative to the United States (10 strike days), Germany's figure appears low, especially considering that collective bargaining coverage in Germany exceeds union density in the U.S. (Jaeger et al., 2022). Countries such as Sweden (1), Slovakia (1), and Switzerland (2) report even lower strike activity, indicating highly consensus-oriented industrial relations.

While strike activity is generally stable over time, there are occasional spikes (e.g. in 2015, 2018, and 2023; see Table A.3), suggesting that most disputes are resolved peacefully, but a small number escalate. Between 2000 and 2024, 50 arbitration cases were recorded, of which 35 were successfully resolved (Lesch, 2024). Overall, collective bargaining in Germany remains largely cooperative and oriented towards consensus, in contrast with more adversarial systems such as the U.S..

4.2.1 Working Time, Flexibility, and Collective Bargaining

German unions have historically placed strong emphasis on working time regulation. Figure 3 shows the evolution of contractual and actual weekly hours for full-time employees, alongside annual actual working hours for all employees since 1991.

Contractual weekly hours declined modestly, from 38.6 in 1991 to 37.8 in 2024 (- 2.1 percent), while actual weekly hours for full-time workers fell from 39.1 to 38.2 (–2.3 percent). Both trends stabilized in the mid-1990s.

In contrast, average annual hours for all employees declined more substantially, from 1,478 in 1991 to 1,293.2 in 2024 (-12.5 percent). This larger decline reflects structural changes, particularly the expansion of part-time employment (especially among women) and more individualized working time arrangements. Collective bargaining accommodated this growing heterogeneity by allowing greater flexibility, thereby supporting employment growth, especially among women.

4.2.2 Coverage and Wages: Inequality and the Gender Gap

Standard theory predicts that union coverage raises average wages and compresses wage dispersion. Evidence from the U.S. and Canada supports this prediction (Card 1996; Card et al. 2003; Pencavel 1991). In Germany, however, the relationship is more complex, as union membership and coverage are distinct concepts (see section 3.1), and industry-level agreements generate spillovers to uncovered workers and firms (Fitzenberger et al., 2013).

A substantial literature has documented that coverage in Germany is associated with higher wages and lower wage dispersion (Dustmann et al. 2009; Antonczyk et al., 2010; Jaeger et al. 2022), while union membership per se is not clearly associated with wage premia (Fitzenberger et al., 2013).

To illustrate distributional patterns, Figure 4 plots coverage rates (by either industry-level or firm-level agreements) by wage decile for full-time workers in 2010 and 2021. Panel (a) shows a notable increase in coverage across the distribution. In 2010, 41 percent of employees in the bottom decile were covered by a collective agreement, rising to 72 percent in the sixth decile, after which coverage plateaus through the tenth decile. By 2021, these figures fell to 34 percent

and 62 percent, respectively. The relative decline was greater at the bottom (–17.1 percent) than at the middle (–13.9 percent), reflecting the growing importance of the uncovered low-wage sector, a key motivation for introducing the statutory minimum wage in 2015. Above the sixth decile, coverage remains fairly stable in both years.

Disaggregating by agreement type (Figure 4, Panel (b)) shows that industry-level coverage declined across the distribution, particularly at the bottom, while firm-level coverage increased, especially in the middle and upper deciles. Specifically, in 2010, 36 percent of workers in the bottom decile were covered by an industry-level agreement, rising to 61 percent at the sixth decile. By 2021, these shares had declined to 31 percent and 48 percent, respectively. Firm-level coverage in the bottom decile remained constant at 4 percent in both years, while at the sixth decile it increased from 11 percent in 2010 to 14 percent in 2021.

Overall, coverage by industry-level agreements declined, particularly at the lower end of the wage distribution, whereas firm-level coverage increased, especially in the middle and upper deciles. In both years, both types of agreements were more prevalent among higher-wage workers. However, firm-level agreements exhibit a steeper gradient along the wage distribution, a pattern that has become more pronounced over time. This feature has received little attention in the existing literature.

Turning to gender, unions have historically had a higher share of male members, reflecting their strong presence in the manufacturing sector.[17] This could suggest larger wage effects of collective bargaining for men, contributing to a possible widening of the gender pay gap. However, collective bargaining also compresses wage differentials, which could counteract this effect, as women, on average, earn less than men. Consistent with this, Collischon and

[17] Data from the Statistics Department of the Federal Employment Agency indicate that, over the past 15 years, women accounted for approximately 25 percent of employment in the manufacturing sector. Fitzenberger et al. (2011) find a higher union membership rate among men than among women.

Zimmermann (2025) show that the gender pay gap is smaller in covered firms, suggesting that the equalizing effect dominates.

Figure 5 shows coverage along the wage distribution by gender. In 2010, 64 percent of male full-time workers were covered by collective agreements, compared to 58 percent of female workers. By 2021, these figures had declined to 55 and 51 percent, respectively. For both genders, coverage increases up to the sixth or seventh decile and remains roughly constant thereafter.

The decline in coverage was more pronounced among low-wage men than among low-wage women. Among male workers in the bottom decile, coverage fell from 46 percent in 2010 to 36 percent in 2021 (–10 percentage points), whereas for female workers it declined only slightly, from 34 to 33 percent. As a result, gender differences in coverage narrowed considerably across the distribution. By 2021, women in the top decile exhibited slightly higher coverage than men (68 percent vs. 64 percent).

4.2.3 Works Council Coverage

We next examine the distribution of works council coverage across the wage distribution (Figure 6).[18] Coverage exhibits a steep and persistent wage gradient, even more pronounced than that for collective bargaining, which to a knowledge provides novel findings. In 2010, only 13 percent of full-time workers in the bottom decile were employed at firms with a works council. This share increased to 65 percent in the sixth decile and reached 78 percent in the top decile (Figure 6, Panel a). The overall pattern remains in 2021, although coverage in the middle of the distribution declined somewhat, while remaining unchanged at the bottom.

[18] A works council is a firm-level body of elected worker representatives, often including union members, with codetermination rights (Bellmann et al. 2018).

Gender differences are modest and have diminished over time. In 2010, coverage was slightly higher among men than women (Figure 6, Panel b). By 2021, however, coverage had largely converged across genders and is remarkably similar throughout the wage distribution.

Two patterns parallel those observed for collective bargaining. First, both forms of institutional protection increase with wages, leaving low-wage workers disproportionately uncovered. This gap at the low end of the distribution was a key motivation for introducing the statutory minimum wage in 2015. Second, gender differences in institutional coverage have narrowed substantially. Consistent with this, the gender wage gap is lower in firms covered by collective agreements and with works councils (Collischon and Zimmermann (2023), suggesting that such institutions contribute to reducing wage inequality.

4.3 Strengths and Weaknesses of Collective Bargaining in Germany

Collective agreements tend to raise wages and reduce wage inequality within industries and firms. They also improve working conditions and foster cooperation and information-sharing between workers and management. Job security is likely higher in covered firms, as unions and works councils, which are more prevalent in such firms, represent the interests of incumbent workers, for example, through work-sharing arrangements or employment protection during downturns (Jäger et al. 2022). Together, these features support long-term employment relationships between firms and employees. By stabilizing wages, collective bargaining may also contribute to macroeconomic stability and encourage investment by firms.

A key strength of the German system is its institutional flexibility. Collective agreements have historically included mechanisms that allow firms to adjust during economic downturns while preserving employment. During the early 2000s, when Germany faced high unemployment and declining competitiveness, globalization and the opening of Eastern Europe increased competitive pressures. In response, unions accepted moderate wage growth and greater

flexibility in wages and working hours. “Opening clauses” enabled firm-level adjustments within industry agreements, allowing firms to renegotiate regional and industry-wide collective agreements. Works councils helped ensure that these adjustments were acceptable to workers and that gains from recovery were shared. This process contributed to productivity growth and restoration of competitiveness (Dustmann et al. 2014).

Similar mechanisms proved effective during the Great Recession of 2008–09, helping to stabilize employment and laying the groundwork for a prolonged labor market expansion in the 2010s. A more recent example of institutional flexibility is a 2025 collective agreement in the metal industry in Baden-Württemberg, which enables temporary employee leasing—similar to temporary agency work—between participating firms within the industry, while allowing workers to return to their original job for up to six months. The aim of the agreement is to avoid short-time work or dismissals and to facilitate smooth transitions of workers from contracting to expanding firms.

It remains an open question to what extent these provisions are used in practice, but the agreement illustrates how industry-level bargaining can create flexibility margins at the firm level in adverse economic conditions. Notably, these provisions apply only to union members and firms covered by the agreement.

The German industrial relations system entails also important rigidities. Firms bound by collective agreements may face constraints in adjusting wages, particularly when flexibility provisions are limited. This can be especially burdensome for smaller firms, which have less influence over bargaining outcomes, giving them an incentive to opt out of the system. Collective bargaining can also give rise to insider–outsider dynamics, with incumbent workers benefiting at the expense of non-union workers or job seekers. These effects tend to be more pronounced in firm-level bargaining or in sectors with powerful unions representing specific

worker groups (such as the Locomotive Drivers' Union GdL strikes), and less so under industry-level bargaining.

As we illustrated in sections 3.2 and 4.1, despite its continued relevance, collective bargaining coverage and union membership, as well as participation in employer associations, have declined substantially, particularly among low-wage workers. Increased wage flexibility within the system during the 1990s and 2000s, while supporting restructuring and gaining competitiveness, contributed to rising wage dispersion.

Looking ahead, current economic challenges, especially pressures on the manufacturing sector, pose significant risks to the system. Industry-level bargaining is well-suited to coordinate adjustments within sectors, balancing employment and wage protection with the need for structural change. However, when entire industries face structural decline, its ability to simultaneously support structural transformation and safeguard employment becomes more limited.

4.3.1 The Rising Role of the Minimum Wage

The expansion of the low-wage sector and the decline in collective bargaining coverage were key factors behind the introduction of a statutory minimum wage in 2015 at € 8.50 per hour. Since then, minimum wage policy has become increasingly important in the low-wage segment. Unlike collective agreements, the statutory minimum wage in Germany is uniform across industries and regions, which may distort wage structures and raise concerns about efficiency and fairness. As a binding wage floor, it may also weaken incentives for firm-sponsored training (Bellmann et al. 2017). There is some evidence that it has contributed to a decline in apprenticeship entry, as apprentice pay has fallen relative to wages for low-skilled workers (Schumann 2017).

Recent policy changes have reinforced this trend. In 2022, the minimum wage was increased substantially to € 12 per hour through a political decision, and a further sizeable increase has occurred in 2026 (now € 13.90) and is proposed for 2027 (€ 14,60). These developments are likely to expand the share of workers directly affected, further shifting wage-setting in the low-wage segment away from collective bargaining.

At the same time, the minimum wage is a blunt instrument. It does not adjust to firm-specific conditions or local labor market circumstances and is subject to political influence. Unlike collective agreements, it is not embedded in a broader framework governing working conditions. As its role expands, collective bargaining may become less relevant, particularly in the low-wage segment (Bellmann et al. 2018).

5 Comparison between Germany and the US

In Germany, industry-level collective bargaining remains the dominant form of wage-setting, complemented by works councils that strengthen worker representation and facilitate firm-level coordination. The widespread practice of "orientation", whereby uncovered firms voluntarily apply key elements of industry agreements, implies that the influence of collective bargaining extends well beyond formally covered workers and firms. This system promotes stability by largely removing wage negotiations from the firm level and establishing predictable, sector-wide standards.

In contrast, the United States relies primarily on decentralized, firm-level bargaining, which has become increasingly marginal in the private sector. Unionization rates have declined substantially, and industrial relations are often more adversarial. Adjustment to economic shocks typically occurs at the firm level through layoffs or concession bargaining (i.e., incumbent workers agree to a lower wage increase or even a wage cut), rather than through responses coordinated across firms. The U.S. system is also more prone to insider–outsider

dynamics, as unions focus on incumbent members and institutional mechanisms for broader coordination are limited.

German industry-level agreements set relatively uniform wages within industries and regions, reflecting productivity differences and incorporating mechanisms to address economic shocks, such as hardship clauses. The institutional framework also supports vocational training, both through federal regulation and through the stability and coordination provided by collective agreements. This contributes to labor mobility and mitigates insider–outsider divisions relative to more decentralized systems. In addition, vocational training is often closely linked tied to the introduction of new technologies, supporting structural transformation and long-term productivity growth.

6. Conclusion

Germany's collective bargaining system, anchored in industry-level coordination and complemented by works councils, has historically played a key role in promoting equitable wage growth, employment stability, and firm-level cooperation. The system has shown remarkable flexibility during economic crises, enabling coordinated restructuring and productivity gains. In addition, it helps limit monopsony power. However, this effect is likely weaker in the low-wage sector, which we provide novel evidence for: both coverage by collective agreements and coverage by works councils are lower at the bottom of the wage distribution, suggesting that workers (and unions) in this segment have less bargaining power.

At the same time, collective bargaining has declined substantially, particularly among low-wage workers. In response, statutory minimum wage regulation has become more prominent. However, the decline in formal coverage overstates the erosion of collective bargaining. Firm-level orientation, in which firms voluntarily adopt key elements of industry-level wage agreements, remains widespread, especially among small and medium-sized firms, and allows

them to deviate from the agreements without engaging in formal wage bargaining. Such spillover effects of collective bargaining to uncovered firms imply that uncovered firms are not an appropriate counterfactual for the absence of collective bargaining.

Firm-level bargaining has gained some importance over time, particularly among high-wage firms and workers. It does not appear to promote low-wage employment or downward wage flexibility. Instead, it tends to reinforce wage premia in high-wage firms and may be more susceptible to insider-outsider dynamics (Fitzenberger and Franz 1998).

While the minimum wage has raised wage floors and helped reduce inequality, it lacks the institutional depth and flexibility of collective bargaining.

The U.S. experience highlights the risks associated with decentralized bargaining and weak coordination, including higher wage inequality and more adversarial labor relations. A continued decline in collective bargaining is therefore likely to increase employer monopsony power, with adverse consequences for workers.

Looking ahead, the viability of Germany's collective bargaining system will depend on its ability to adapt to ongoing structural change, including the transformation of the manufacturing sector, while avoiding further fragmentation and preserving the coordination and flexibility that have historically underpinned its success.

References

Acemoglu, D. & Pischke, S. (1999). The Structure of Wages and Investment in General Training, *Journal of Political Economy*, 107, 539-573.

Antonczyk, D., Fitzenberger, B., & Sommerfeld, K. (2010). Rising wage inequality, the decline of collective bargaining, and the gender wage gap. *Labour Economics*, *17*(5), 835-847.

Baumgarten, D., & Lehwald, S. (2019). *Trade exposure and the decline in collective bargaining: Evidence from Germany*. Collaborative Research Center Transregio 190, LMU Munich and HU Berlin, Discussion Paper, No. 165.

Bellmann, L., Gerner, H.-D., & Laible, M.-C. (2016). The German Labor Market Puzzle in the Great Recession, in: Askenazy, P., Bellmann, L., Bryson, A., & Galbis, E.M. (eds.). *Productivity Puzzles Across Europe*, pp. 187-235. Oxford: Oxford University Press.

Bellmann, L., Bossler, M., Gerner, H-D., & Huebler, O. (2017). Training and minimum wages: first evidence from the introduction of the minimum wage in Germany. *IZA Journal of Labor Economics*, 6 (article number 8). https://doi.org/10.1186/s40172-017-0058-z/

Bellmann, L, Bossler, N., & Huebler, O., (2018). Collective bargaining coverage, works councils and the new German minimum wage. *Economic and Industrial Democracy*, 42(2). https://doi.org/10.1177/0143831X18762304/

Booth, A. L. (2014). Wage determination and imperfect competition. *Labour Economics*, *30*, 53-58.

Card, D.. (1996). The Effect of Unions on the Structure of Wages: A Longitudinal Analysis. *Econometrica*, 64(4): 957–979.

Card, D., Lemieux,Th., & Riddell, W. C . (2003). Unions and the Wage Structure, in: Addison, J.T. & Schnabel, C. (eds.). *International Handbook of Trade Unions*, pp. 246–292. Cheltenham: Edward Elgar.

Cardoso, A. R., & Portugal, P. (2005). Contractual wages and the wage cushion under different bargaining settings. *Journal of Labor Economics*, *23*(4), 875-902.

Carlsson, M., Skans, I., & Nordström Skans, O. (2026). "Outsider Unemployment, Insider Wages, and the Disappearance of the Swedish Wage Curve." Sveriges Riksbank Working Paper No. 459.

Collischon, M. & Zimmermann, F. (2023). Wage Inequality between Women and Men: Firms with Equality Policies Exhibit Smaller Gender Pay Gaps. IAB-Kurzbericht 17/2023. https://doi.org/10.48720/IAB.KB.2317.

Collischon, M. & Zimmermann, F. (2025). In tarifgebundenen Betrieben ist der Gender Pay Gap kleiner, IAB-Forum, Grafik aktuell vom 7. März 2025, DOI: 10.48720/IAB.FOO.GA.20250307.01, Abruf am: 16.07.2025, https://iab-forum.de/graphs/in-tarifgebundenen-betrieben-ist-der-gender-pay-gap-kleiner/.

Dribbusch, H., Schulten, Th., Luth, M.S., & Janssen, T. (2024). WSI Arbeitskampfbilanz 2023. WSI-Report Nr. 95. Düsseldorf. https://www.wsi.de/de/arbeitskaempfe-40818.htm

Dustmann, C., Fitzenberger, B., Schönberg, U., & Spitz-Oener, A. (2014). From sick man of Europe to economic superstar: Germany's resurgent economy. *Journal of Economic Perspectives*, *28*(1), 167-188.

Dustmann, C., Ludsteck, J., & Schönberg, U. (2009). Revisiting the German wage structure. *The Quarterly Journal of Economics*, *124*(2), 843-881.

Dustmann, C., & Schönberg, U. (2009). Training and union wages. *The Review of Economics and Statistics*, *91*(2), 363-376.

Dustmann, C., Lindner, A., Schönberg, U., Umkehrer, M., & Vom Berge, P. (2022). Reallocation effects of the minimum wage. *The Quarterly Journal of Economics*, *137*(1), 267-328.

Federal Statistical Office (2025). Collective bargaining coverage. https://www.destatis.de/EN/ThemesLbour/Earnings/Agreed-Earnings-Collective-Bargaining-Coverage/Tables/collective-bargaining-coverage-germany-employees.html

Fitzenberger, B., & Franz, W. (1999). Industry-Level Wage Bargaining: A Partial Rehabilitation—The German Experience. *Scottish Journal of Political Economy*, *46*(4), 437-457.

Fitzenberger, B., Karsten, K., & Wang, Q. (2011). The Erosion of Union Membership in Germany: Determinants, Densities, Decompositions. *Journal of Population Economics* 24(1): 141–165.

Fitzenberger, B., Kohn, K., & Lembcke, A. C. (2013). Union density and varieties of coverage: the anatomy of union wage effects in Germany. *Industrial and Labor Relations Review*, *66*(1), 169-197.

Fitzenberger, B. (2014). Comments on "Wage determination and imperfect competition". *Labour Economics* 30: 59-61.

Freeman, R. B., & Medoff, J. L. (1984). *What Do Unions Do?* New York: Basic Books.

Hicks, J. R. (1932). *The Theory of Wages*. London: Macmillan.

Greef, S. (2025). DGB-Gewerkschaften in Zahlen 2025, *Bits & Pieces* 7(1). https://www.samuel-greef.de/gewerkschaften/

Günther, W., & Höpner, M. (2023). Why does Germany abstain from statutory bargaining extensions? Explaining the exceptional German erosion of collective wage bargaining. *Economic and Industrial Democracy*, *44*(1), 88-108.

Hohendanner, C., & Kohaut, S. (2024). 75 Jahre Tarifvertragsgesetz: Sind Branchentarife und betriebliche Mitbestimmung ein Auslaufmodell? IAB-Forum 22.4.2024. https://doi.org/48.720/IAB.FOO.20240422=1

Institut für Arbeitsmarkt- und Berufsforschung (IAB) (2025). Working Time Measurement. https:/doku.iab.de/arbeitsmarktdaten/AZ_Komponenten.xlsx

Jäger, S., Noy, S., & Schoefer, B. (2022). The German model of industrial relations: Balancing flexibility and collective action. *Journal of Economic Perspectives*, *36*(4), 53-80.

Jäger, S., Naidu, S., & Schoefer, B. (2024). *Collective bargaining, unions, and the wage structure: An international perspective*, in : C. Dustmann and T. Lemieux. Dustmann, C., & Lemieux, T. (2025). *Handbook of Labor Lconomics* (Vol. 6). Elsevier, Part 4, pp. 230-372.

Lesch, H. (2024). Streikschäden vermeiden. Was bringt die Schlichtung? *Aus Politik und Zeitgeschichte* Heft 45. 42-48. https://www.bpb.de/shop/zeitschriften/apuz/streik-2024/556157/streikschaeden-vermeiden/

Lindbeck, A., & Snower, D. J. (2001). Insiders versus Outsiders. *Journal of Economic Perspectives*, 15(1), 165–188.

Manning, A. (2021). Monopsony in Labor Markets: A Review. *ILR Review*, 74(1), 3–26.

McDonald, I. M., & Solow, R. M. (1981). Wage bargaining and employment. *American Economic Review*, 71, 896-908.

OECD (2004). OECD *Employment Outlook*, Chapter 3, Wage–Setting Institutions and Outcomes. Organisation for Economic Cooperation and Development. Paris.

OECD (2019). Negotiating Our Way Up: Collective Bargaining in a Changing World of Work. OECD Publishing, Paris.

Oswald, A. J. (1982). The Microeconomic Theory of the Trade Union. *Economic Journal*, 92(367), 576–595.

Pencavel, J, (1991). *Labor Markets under Trade Unionism: Employment, Wages, and Hours.* Oxford: Blackwell.

Schnabel, C. (2025). Unions and employers' associations in Germany: a survey of their membership, density and bargaining coverage. *Journal of Labour Market Research,* 59 (7), https://doi.org/10.1186/s12651-25-00393-2

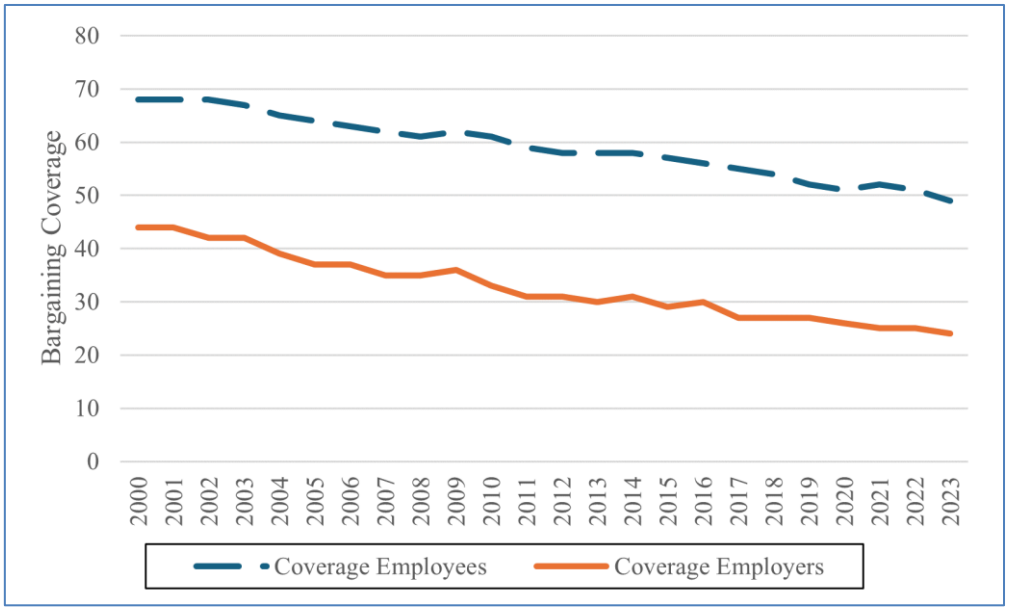
Schulten, Th. (2024). Schon wieder Streik? Arbeitskämpfe in Deutschland im europäischen Vergleich. *Aus Politik und Zeitgeschichte* Heft 45, 9-15. https://www.bpb.de/shop/zeitschriften/apuz/streik-2024/556157/schon-wieder-streik/

Schumann, M. (2017). The effects of minimum wages on firm - financed apprenticeship training. *Labour Economics*, 47, 163-181. https://doi.org/10.1016/j.labeco.2017.05.002

Statista (2025). Gewerkschaften in Deutschland. Hamburg. https.//de.statista.com/studien-und-reports/

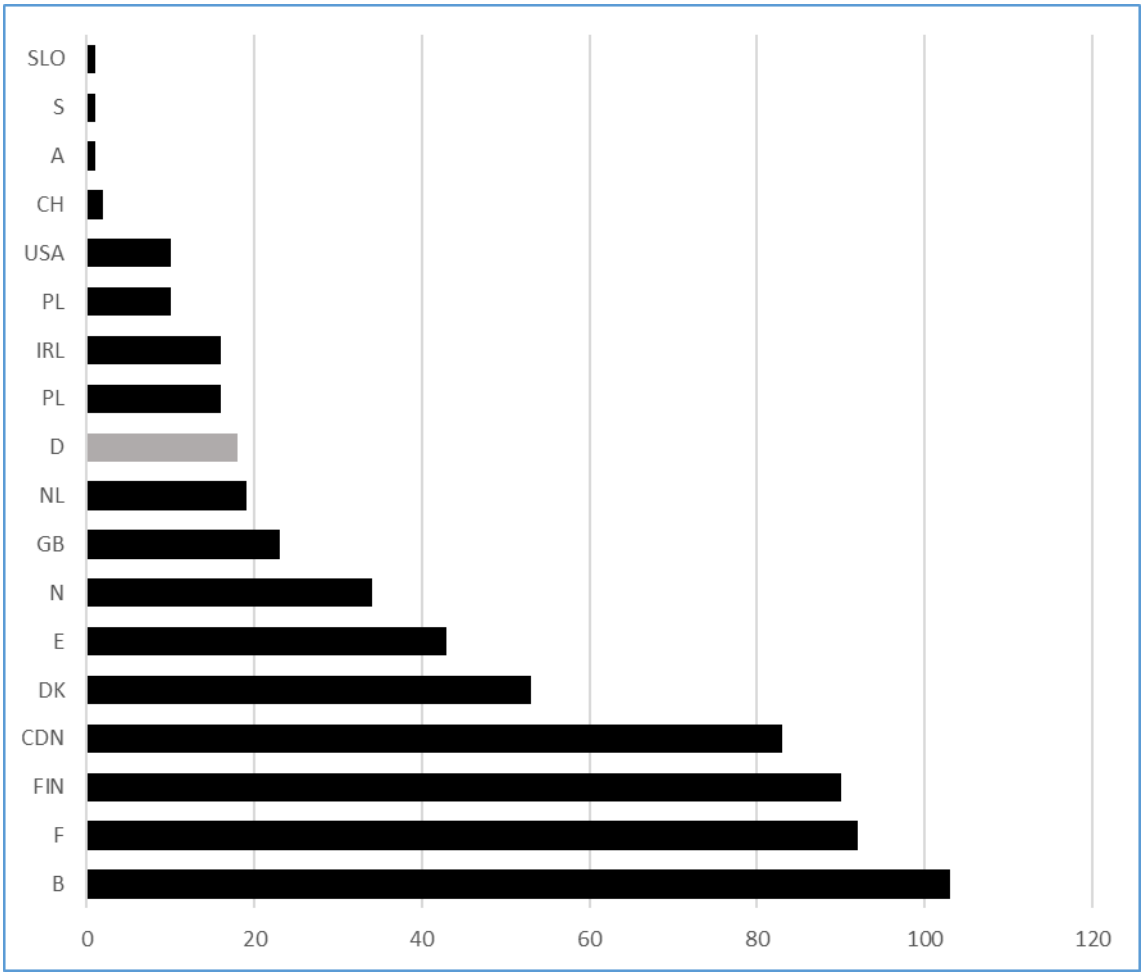
Wirtschafts- und Sozialwissenschaftliches Institut (WSI) Tariff Archive (2025). Wochenarbeitszeiten https://www.wsi.de/data/wsi_wochenarbeitszeiten.xlsx

Figure 1: Bargaining Coverage



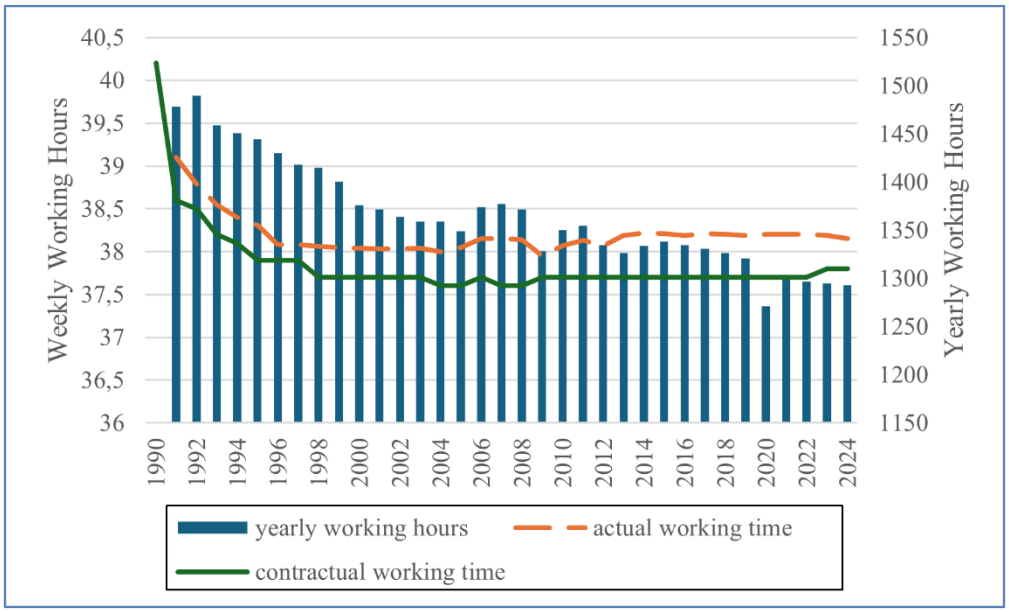
Notes: This figure shows the development of the bargaining coverage between 2000 and 2023. Bargaining coverage is defined as the proportion of employees or employers, respectively, covered by either industry-level or firm-level agreements. *Source*: Kohaut & Hohendanner (2024) using the IAB Establishment Panel Survey.

Figure 2: Days lost because of industrial conflicts for different countries in relation to the number of employees, yearly average 2013-2022



Notes: This figure shows the number of days of absence caused by industrial conflicts in different countries in relation to the number of employees. These are annual average value for the years 2013 until 2022. The number of days of absence caused by industrial conflicts include the days lost due to strikes and lockouts as a result of industrial conflicts. *Source*: Dribbusch, Schulten, Luth & Janssen (2023) using data from the International Labour Organization (ILO) and the European Trade Union Institute (ETUI).

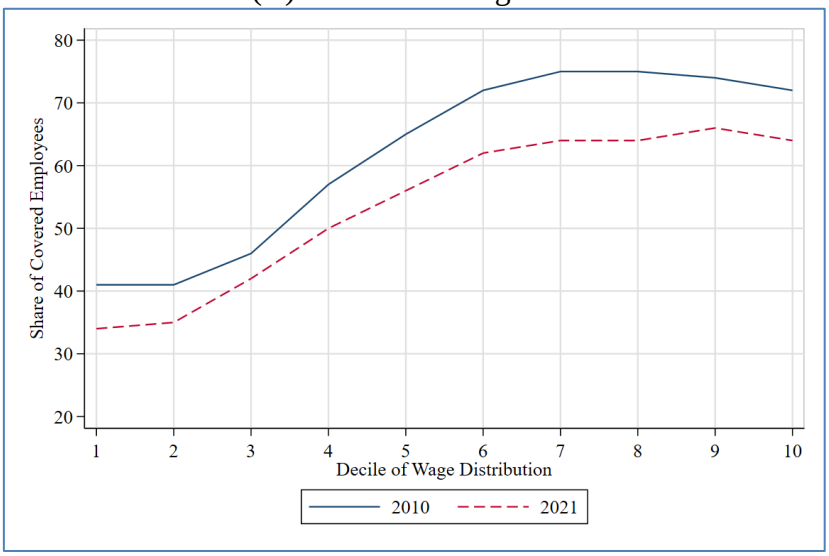
Figure 3: Actual and contractual working time



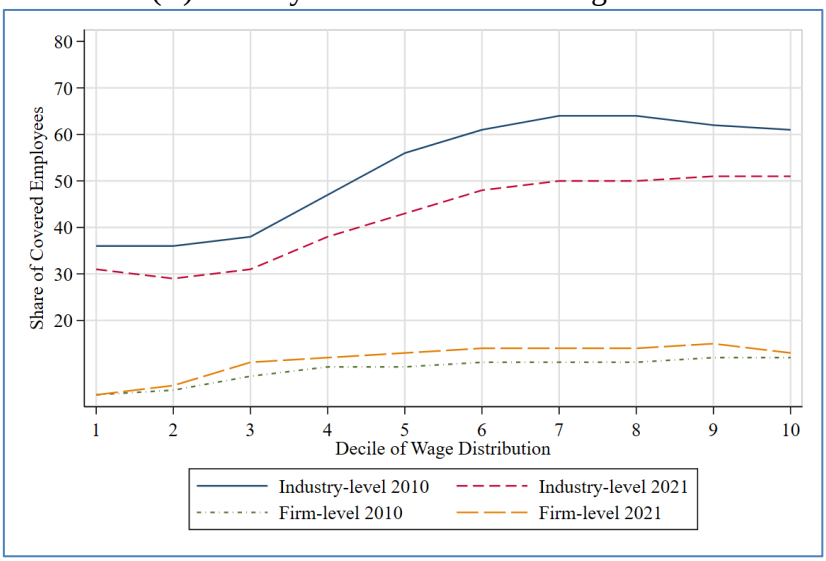
Notes: The figure shows the evolution of contractual and actual weekly working hours for full-time employees as well as the annual working hours for all employees between 1990 and 2024. The left axis displays the number of weekly working hours, the right axis annual working hours. *Sources*: IAB Working Time Measurement (2025) and WSI Tariff Archive (2025).

Figure 4: Coverage by collective agreements along the wage distribution

(A) All collective agreements



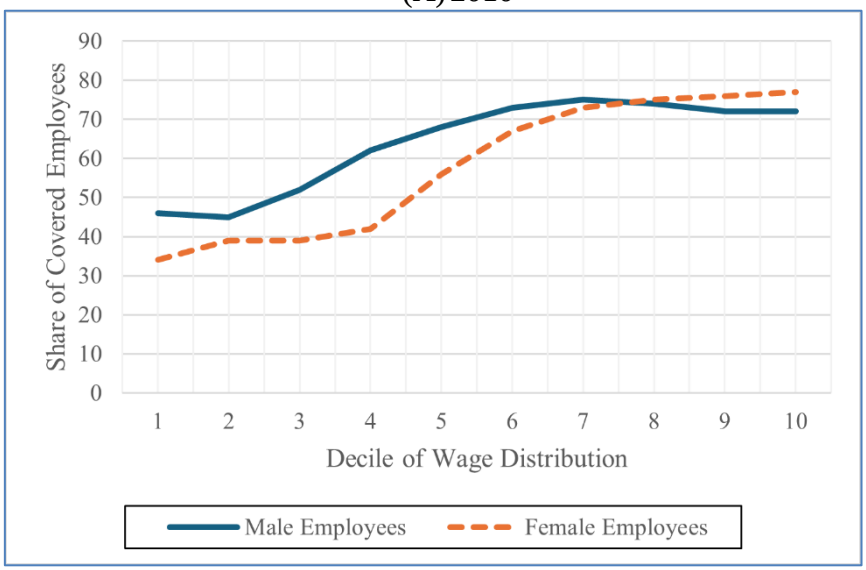
(B) Industry-level and firm-level agreements



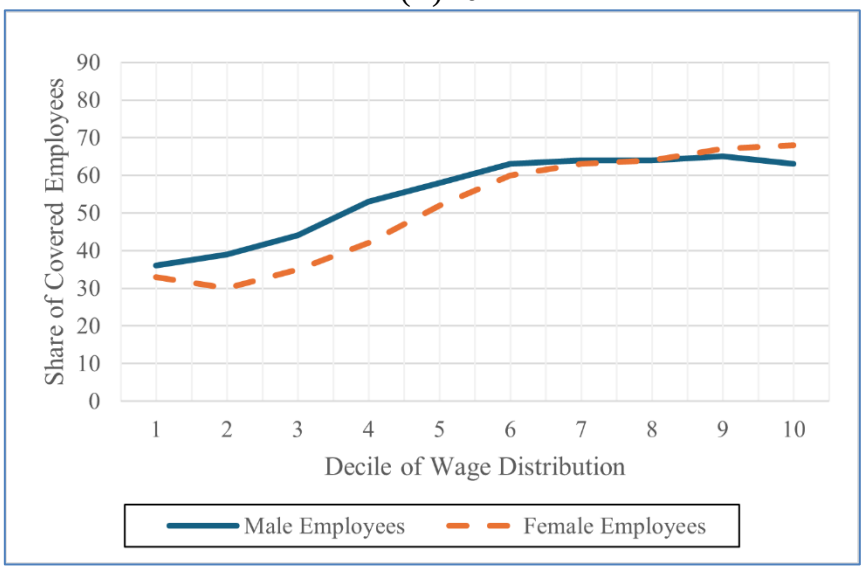
Notes: This figure shows the proportion of employees covered by collective agreements among full-time employees by decile of wage distribution in 2010 and in 2021. Collective agreement coverage is defined as the proportion of employees covered by either industry-level or firm-level agreements. Panel A displays the proportions of employees with collective agreements in the respective decile of the wage distribution which are linearly connected for the years 2010 and 2021. The same applies in Panel B for employees covered separately by industry-level and firm-level agreements. *Source*: Own calculations using the Linked Employer-Employee data of the IAB.

Figure 5: Coverage by collective agreements along the wage distribution (males and females)

(A) 2010



(B) 2021



Notes: This figure shows the proportions of male and female employees covered by collective agreements among full-timer employees by decile of wage distribution in 2010 and in 2021. Collective agreement coverage is defined as the proportion of employees covered by either industry-level or firm-level agreements. In Panel A the proportions of male and female employees with collective agreements at the respective decile of the wage distribution are linearly connected for the year 2010.The same applies in Panel B for the year 2021. *Source*: Own calculations using the Linked Employer-Employee data of the IAB.

Figure 6: Coverage by works councils along the wage distribution

(A) All Employees

(B) By Gender

Notes: This figure shows the proportions of employees with works council among full-time employees by decile of wage distribution in 2010 and 2021. In Panel A the proportions of employees with works council are linearly connected for the year 2010 and 2021. The same applies in Panel B for the respective proportions of males and females separately. *Source*: Own calculations using the Linked Employer-Employee data of the IAB.

Table 1: Members of the German Trade Union Federation and union density in Germany, 1950-2024

Year	Union members (in Mill.) (1)	Union density (in %) (2)
1950	5,54	41
1955	6,18	37
1960	6,38	32
1965	6,57	30
1970	6,71	30
1975	7,38	33
1980	7,88	32
1985	7,72	31
1990	7,94	29
1991	11,8	33
1995	9,35	22
2000	7,77	22
2005	6,78	19
2010	6,19	17
2015	6,1	16
2020	5,85	14
2024	5,67	13

Notes: This table shows the development of the number of union members (column 1) and trade union density (column 2) between 1950 and 2025 (West Germany up to 1990, unified Germany from 1991 onward). Trade union density is defined as the percentage of employed who are members of the eight major unions of the German Trade Union Confederation (Deutscher Gewerkschaftsbund - DGB, cf. Table A.1). The number of employees is measured as the total number of dependent employees based on data published by the German Federal Statistical Office. *Source*: Greef (2025).

Table 2: Bargaining coverage in Germany, 2023

a) Proportion of employees covered by industry- and firm-level collective agreements in percent

	Industry-level			Firm-level	Industry- and firm-level	
	(1)	(2)	(3)	(4)	(5)	(6)
	Coverage	Orientation	Coverage or orientation	Coverage	No coverage	No coverage and no orientation
West Germany	44	26	70	7	49	23
East Germany	31	25	56	14	56	31
Private sector	35	30	65	7	58	28
Public admin.	83	1.5	84.5	15	2	0.5
Total	42	26	68	8	51	25

b) Proportion of employers covered by industry- and firm-level collective agreements in percent

	Industry-level			Firm-level	Industry- and firm-level	
	(1)	(2)	(3)	(4)	(5)	(6)
	Coverage	Orientation	Coverage or orientation	Coverage	No coverage	No coverage and no orientation
West Germany	23	31	54	2	75	44
East Germany	15	27	42	3	83	56
Private sector	20	31	51	2	79	48
Public admin.	78	8	86	9	13	5
Total	22	30	52	2	76	46

Notes: These tables show the bargaining coverage, defined as the proportion of employers covered by industry-level agreements orientate themselves toward an industry-level agreement. Due to rounding errors, columns (1), (4), and (5) and columns (3), (4), and (6), respectively, do not always sum up to 100 percent. Panel A presents "Industry-level coverage"; this is defined as the proportion of employees working in a firm with an employer bound by an industry-level agreement. "Orientation" is defined as the proportion of employees working in a firm with an uncovered employer with an industry-level agreement as a reference point. Source: Schnabel (2025) and own calculations using the IAB-Establishment Panel.
Panel B presents "Industry-level coverage"; this is defined as the proportion of employers bound by an industry-level agreement. "Orientation" means the proportion of employers with an industry-level agreement as a reference point. "Firm-level coverage" is defined as the proportion of employers with a firm-level agreement. Employers are regarded as uncovered if they are not covered by either an industry- or a firm-level contract. "No coverage & no orientation" refers to a situation in which neither an industry-, firm-level nor an orientation towards an industry-level agreement applies. *Source*: Schnabel (2025) and own calculations using the IAB-Establishment Panel.

Table A.1: Members of major unions in Germany, 2024

	Number of union members
(1) Trade Union of the Metal Industry	2.096.511
(2) United Service Union	1.864.633
(3) Mining, Chemical and Energy Industries Union	566.560
(4)Trade Union for Education and Science	273.544
(5) Union of Police	211.326
(6) Industry Trade Union Construction-Agriculture-Environment	197.562
(7) Food, Beverage and Catering Union	184.972
(8) Railway and Transport Union	183.807
(9) German Trade Union Confederation	5.578.915
(10) German Association of Public Servants	1.362.786

Notes: This table shows the number of members of the eight unions belonging to the German Trade Union Confederation (row 9). The German Association of Public Servants is not a member of the German Trade Union Confederation (row 10). *Sources*: Statista (2025), Greef (2025), Schnabel (2025).

Table A.2: Bargaining Coverage and operational agreements in Germany, 2024

	Name of economic sector	With collective agreement	With operational agreement
A to S	overall economy	21	69
C	manufacturing	14	73
F	construction industry	33	48
G	trade, maintenance: repair of motor vehicles	15	75
H	transport and storage	17	74
I	hospitality industry	13	76
J	information, communication	8	90
K	provision of financial and insurance services	21	73
L	real estate and housing	12	84
M	freelance scientific and technical services	7	88
N	other economic services	34	57
O	public administration, defense; social security	100	-
P	education and teaching	61	27
Q	health and social services	20	64
S	other services	31	57

Notes: This table shows the proportion of establishments with bargaining coverage and operational agreements by economic sector. Bargaining coverage is defined by the proportion of establishments covered either by industry-level or firm-level agreements. Although they are not always legally binding, operational agreements control the wage development and the wage structure of the respective establishment. - = nothing present.
Source: Federal Statistical Office (2025) using the Earnings Survey 4/2024 (as at 3.4.2025).

Table A.3: Industrial conflicts, days lost and strikes in Germany, 2010-2023

Year	Number of industrial conflicts (absolut)	Number of striker (in thousand)	Number of days lost (in thousand)
2010	152	120	173
2011	192	182	304
2012	236	1200	630
2013	218	1003	551
2014	212	345	392
2015	225	1133	2.002
2016	201	1055	462
2017	197	131	238
2018	216	1152	1.032
2019	227	270	360
2020	157	276	342
2021	221	909	596
2022	225	930	674
2023	312	857	1.527

Notes: This table shows the development of industrial conflicts between 2010 and 2023, measured by the number of industrial conflicts, the number of strikes and the days of absence caused by industrial conflicts. The days of absence caused by industrial conflicts include all days lost due to strikes and lockouts as a result of industrial conflicts. *Source*: Schulten (2024) using data from the WSI Industrial Conflicts Statistics.

Table A.4: Translation of the names of the German unions and umbrella organisations

Name of union	Name der Gewerkschaft
Trade Union of the Metal Industry	IG Metall
United Service Union	Vereinigte Dienstleistungsgewerkschaft
Mining, Chemical and Energy Industries Union	IG Bergbau, Chemie, Energie
Trade Union for Education and Science	Gewerkschaft Erziehung und Wissenschaft
Industry Trade Union Construction-Agriculture-Environment	IG Bau – Agrar – Umwelt
Food, Beverage and Catering Union	Gewerkschaft Nahrung – Genuss - Gaststätten
Railway and Transport Union	Eisenbahn- und Verkehrsgewerkschaft
Union of Police	Gewerkschaft der Polizei
German Trade Union Confederation (umbrella organisation)	Deutscher Gewerkschaftsbund (Dachorganisation)
German Association of Public Servants[1]	Beamtenbund und Tarifunion

[1] Does not belong to the German Trade Union Confederation

Notes: This table includes the official German names of the unions and our own translation into English.