

The German Model of Industrial Relations: A Primer*

Simon Jäger, Shakked Noy, Benjamin Schoefer

Preliminary Draft — Comments Welcome

May 24, 2022

*sjaeger@mit.edu, snoy@mit.edu, schoefer@berkeley.edu. We thank Alexander Busch, Jannis Hamida, Kilian Weil, and Pascal Zamorski for excellent research assistance. We thank Reinhard Bispinck for very helpful comments.

1 Introduction

The United States and other high-income countries face growing labor market challenges. The past few decades have seen sustained increases in earnings inequality (Autor, 2014; Mishel and Kandra, 2021; Chancel, Piketty, Saez, and Zucman, 2022), a fall in the labor share (Karabarbounis and Neiman, 2014; Grossman and Oberfield, 2021), the disappearance of “good jobs” in manufacturing (Autor, Dorn, and Hanson, 2013; Acemoglu and Restrepo, 2020), the rise of precarious work (Weil, 2014), and steep declines in the influence of organized labor and the bargaining power of workers (Card, Lemieux, and Riddell, 2020; Stansbury and Summers, 2020). These developments threaten to prevent economic growth from translating into shared prosperity.

Germany—the fourth largest economy in the world—has remained partially insulated from these trends. Figure 1 shows its exceptional position among high-income countries. Relative to the United States, German organized labor has remained strong. Half of German workers are covered by a collective bargaining agreement, compared to 6.1% of private-sector Americans (BLS, 2022). Trust in unions is almost twice as high in Germany compared to the US. Annual work hours are low, the low-wage sector is 25% smaller than in the US, and labor’s share of national income is higher. The German manufacturing sector still makes up almost a quarter of GDP (compared to 12% in the US). Germany has one of the highest robot penetration rates in the world (IFR, 2017); yet in sharp contrast to the US (Acemoglu and Restrepo, 2020), robotization has not led to net employment declines in Germany, with local union strength associated with smaller reductions in manufacturing employment (Dauth et al., 2021). Relative to other OECD countries—many of which, like France or Italy, have maintained even higher collective bargaining coverage through more rigid bargaining systems—the German labor market features low unemployment and high labor force participation.

Motivated by these facts, observers and policymakers in other countries have paid increasing attention to the German model of industrial relations (e.g., BBC, 2012; The Economist, 2017, 2020; Vox, 2019b; Strine Jr., Kovvali, and Williams, 2021). The first pillar of the German model is the sectoral bargaining system. Unions and employer associations engage in bargaining at the industry-region level, leading to broader coverage than in the US. Meanwhile, partial decentralization of bargaining to the firm level—through flexibility provisions in sectoral agreements, or direct negotiations between individual firms and sectoral unions—gives firms space to adapt to changing circumstances (but has also resulted in a gradual erosion of coverage). The second pillar of the German model is the system of firm-level codetermination. Workers are integrated into corporate decision-making through membership on company boards and the formation of “works councils,” leading to ongoing cooperative dialogue between shareholders, managers, and workers. Overall, the German model combines centralized “social partnership” between unions and employer associations at the industry-region level with decentralized

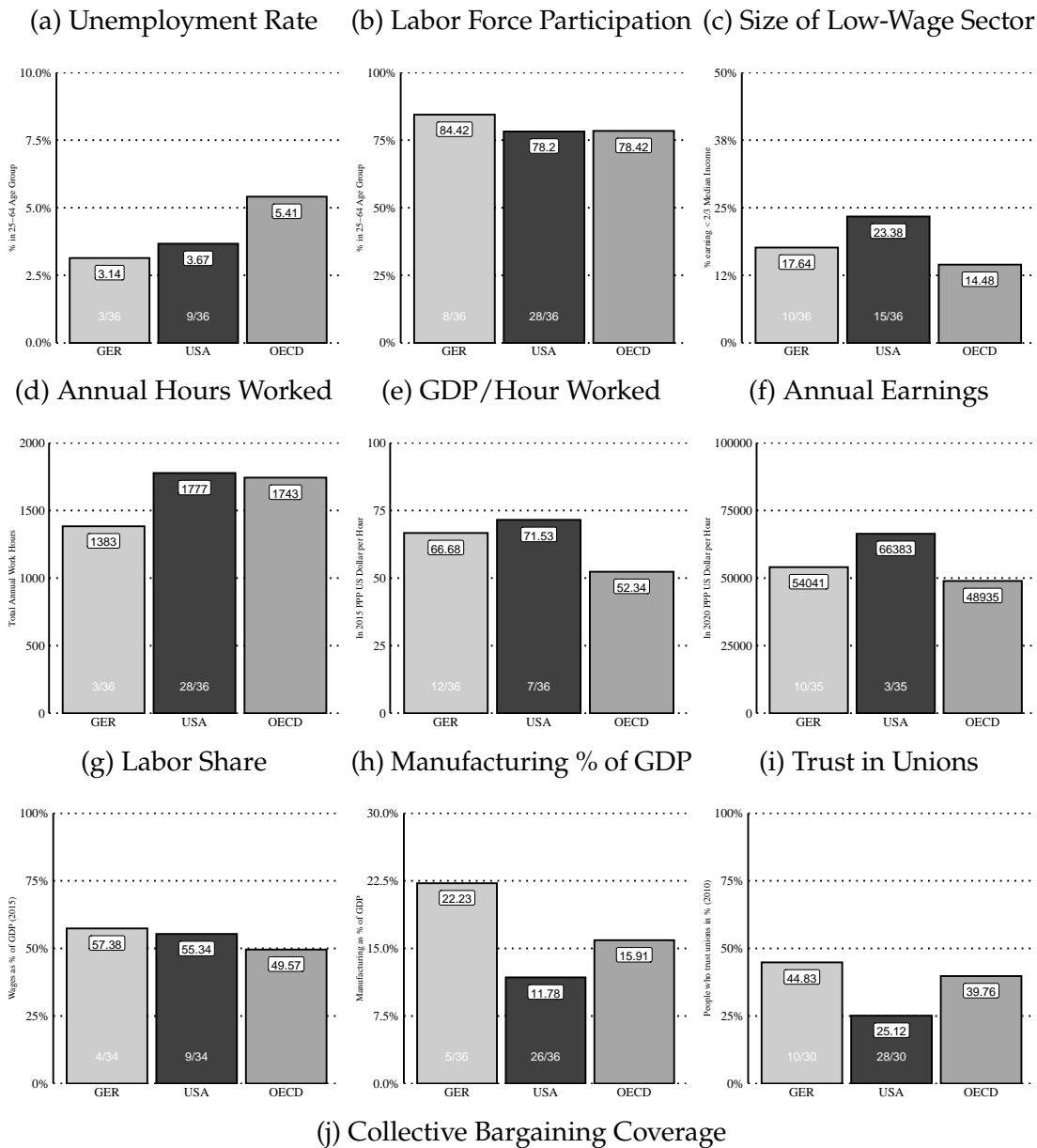
mechanisms for local wage-setting, dialogue, and customization of employment conditions.

German labor market institutions contrast sharply with the US system of industrial relations. *De jure*, American firms are run exclusively by shareholders and managers, with the National Labor Relations Act limiting cooperative forms of institutionalized worker voice akin to German codetermination.¹ Collective bargaining in the US occurs exclusively at the bargaining unit or establishment level—rather than at the sectoral level—thereby giving individual employers strong incentives to resist unionization. Unionization elections are highly contentious and successful unionization is associated with lower profits and establishment closures, especially where managerial opposition is most intense (Lee and Mas, 2012; Frandsen, 2021; Wang and Young, 2022). Over the past few decades, private-sector collective bargaining coverage has been almost completely eroded (Farber et al., 2021; BLS, 2022). Yet, American workers are frustrated with their lack of voice in the workplace, and exhibit demand for representation institutions in the mold of the German system (Kochan, Yang, Kimball, and Kelly, 2019; Hertel-Fernandez, Kimball, and Kochan, 2022). Similarly, American policymakers are increasingly looking to the German system for inspiration. In the 2020 Democratic primaries, the policy platforms of several candidates included proposals to introduce sectoral bargaining or codetermination mandates in the US (Vox, 2019a).

In this article, we present a primer on Germany’s present-day system of industrial relations—the “German model.” In Section 2, we discuss the collective bargaining system; in Section 3, we discuss codetermination; and in Section 4, we reflect on the German model’s capacity to explain Germany’s recent labor market performance.

¹These provisions were historically designed to ban employer-dominated “yellow” unions (e.g., §8(a)(2) NLRA). Subsequent judicial decisions have further narrowed the scope of unions’ bargaining rights in pursuit of unencumbered managerial decision-making (Harlin, 1982).

Figure 1: The German Labor Market in International Comparison



Note: Unless otherwise noted, the data are for 2019. Numbers in white boxes denote the heights of the bars; the numbers at the bottom of the bars denote the US/Germany's rank in the OECD in terms of each measure (with ranks closer to 1 being "better" for all measures). Variation in the total number of OECD countries is due to missing data (e.g., no data for annual wages for Turkey) and different years (manufacturing share data from 2018). Both manufacturing and labour share OECD averages were calculated by the authors from OECD data. Variables: Unemployment = annual percentage of unemployed aged 25 to 64 (OECD, 2022f). Employment rate = employed aged 25 to 64 / population aged 25 to 64 (OECD, 2022e). Low wage sector share = share of employees earning less than 2/3 of the annual median wage (OECD, 2022h). Annual working hours = Total annual working hours / employed population (OECD, 2022d). Annual wage = Total annual wage in constant prices 2020 USD PPP (OECD, 2022a). GDP per hour = Annual GDP in constant prices 2020 USD PPP / total annual working hours (OECD, 2022c). Labor share = Employee compensation as share of GDP (OECD, 2022b). Manufacturing share = Manufacturing sector output as share of GDP (OECD, 2022g). Trust in unions = Share of people who tend to trust unions (GER) or who are "greatly" or "quite a lot" confident in unions (USA) (OECD, 2019). Bargaining coverage = Share of workers covered by a collective agreement (Visser, 2021).

2 Collective Bargaining

The German labor market is shaped by large-scale collective bargaining agreements containing schedules of minimum requirements for wages, hours, working conditions, entitlements, and promotion criteria for workers in different industries, regions, and occupations, and with different levels of skill and experience. These agreements, typically negotiated at the industry-region level, have broad coverage and create significant standardization in wages and working conditions—a sharp contrast to the patchwork system of employer-dominated wage-setting, individual bargaining, and (rare) establishment-level union bargaining prevalent in the United States.² At the same time, the collective bargaining system in Germany allows for an unusual degree of decentralization and flexibility in wage-setting relative to the more rigid bargaining systems of many of its European neighbors, and even makes it relatively easy for employers to avoid coverage altogether.

2.1 The Structure of Collective Bargaining

2.1.1 The Bargaining Parties: Unions, Employer Associations, and Firms

Figure 2 illustrates the employer and employee sides of the primary pillar of German industrial relations: autonomous collective bargaining between sectoral trade unions and industry-region employer associations. As we describe in the next section, collective bargaining agreements can also be concluded between unions and individual firms.

Unions German unions are mostly organized at the sectoral level and are supervised by a small number of major trade union confederations. The most powerful confederation, the *Deutscher Gewerkschaftsbund* (DGB), oversees many of Germany's biggest unions, including *IG Metall* (manufacturing workers), *ver.di* (public-sector and services), *IG BCE* (mining and chemical industries), *GEW* (education and science), *IG BAU* (construction), and *NGG* (catering and restaurants) (DGB, 2021). The DGB covers about 6 million workers; other union confederations include the *Deutscher Beamtenbund* (dbb), overseeing mainly civil service unions and covering about 1.3 million workers, and the Christian CGB, overseeing a variety of independent unions and covering about 300,000 workers (ETUI, 2021). The union confederations compete for members and are differentiated by their political slant and attitudes towards collective bargaining. The DGB is mostly aligned with the centre-left

²This bargaining system was created by the Stinnes-Legien Agreement and Collective Agreements Order of 1918, negotiated between moderate trade unions and major industry leaders against the backdrop of an unstable postwar provisional government and the threat of violent revolution from radical worker movements (Thelen, 1991; Winkler, 1998; Silvia, 2013). The system collapsed in the political and economic turmoil of the 1920s and 1930s, but was resurrected following World War II by the German Basic Law and the Collective Agreements Act of 1949, which closely imitated the system set up by the 1918 agreements.

Social Democratic Party, though it maintains formal political neutrality and strives to always include a member of the centre-right party (the Christian Democratic Union) on its governing staff (ETUI, 2021). It remains strongly committed to broad sectoral bargaining. The dbb and CGB, by contrast, lean more towards the Christian Democrats, and are less committed to industry-level bargaining—for example, the dbb contains several member unions organized at the level of granular occupations rather than industries.

Unions enjoy widespread public support and trust—about 73% of Germans agree that “workers need strong unions,” compared to 49% of Americans (authors’ calculations using the International Social Survey Panel 2015, see also differences in trust in unions in Figure 1 (i)). The partisan gap in support for unions is also smaller in Germany than in the US: 83% of 2013 Social Democratic Party (center-left) voters and 68% of Christian Democratic Union (center-right) voters agree with the statement, compared with 63% of 2012 Obama voters and 26% of Romney voters. Christian Democratic politicians are also broadly supportive of collective bargaining: for example, the party’s 2021 election manifesto asserted that the “social partnership” between unions and employer associations is at the core of Germany’s economic success, called for more sectoral bargaining in the EU, and declared an intention to legislatively extend a greater number of CBAs (see below for a discussion of extensions; CDU, 2021).

German unions are prominent in public discourse. They often engage in policy lobbying (for example, they were instrumental in lobbying for the introduction of a federal minimum wage in 2015), and they fund research centers and think tanks, most notably the DGB-affiliated Hans Böckler Foundation. Trade union research institutes (and rival research institutes sponsored by employer associations) play a major role in economic policy discussions, frequently appearing in the media or writing widely covered reports.

Employer Associations and Individual Firms Similarly to workers, German employers organize in associations at the industry-region level, with these associations in turn belonging to umbrella employer federations ultimately organized in the Federal Society of the German Employer Associations (*Bundesvereinigung der Deutschen Arbeitgeberverbände*, BDA). The BDA comprises 14 interdisciplinary regional associations and 48 federal umbrella associations representing more than 6,500 individual employer associations. Among the largest and most powerful umbrella associations are the metal and electrical industry association *Gesamtmetall*, the insurance companies association *Arbeitgeberverband der Versicherungsunternehmen in Deutschland*, and the chemical industry association *Bundesarbeitgeberverband Chemie*, as illustrated in Figure 2.

Like unions, the primary function of employer associations is to engage in coordinated collective bargaining, but they also have several auxiliary functions. First, they engage in business lobbying focused on labor market policy, complementing the lobbying efforts of trade associations (*Wirtschaftsverbände*) and chambers of commerce and industry (*Industrie- und*

Handelskammern). For example, they have campaigned against the introduction of wealth and inheritance taxes, and lobbied for the abolition of a tax on high-earning individuals and firms (BDI, 2021; BDA, 2021). Second, employer associations often provide member companies with legal advice, management advice, and strike insurance. Third, as previously mentioned, they fund research institutes that play a major role in public discourse and also engage in lobbying and advocacy. Finally, employer associations are prominent networking hubs in the business world, run by volunteer boards composed of executives from member companies (Silvia and Schroeder, 2007).

Relationships Between Unions and Employer Associations Interactions between major employer associations and major trade unions tend to be adversarial but respectful. The DGB and BDA are protective of their status as the economy's defining "social partners," and appreciate the industrial peace and low levels of strikes accompanying their partnership (for example, Germany lost only 5 days per 1,000 employees to strikes between 2001 and 2007, compared to 30 days in the US; Lesch, 2009). The DGB and BDA are hence wary of mutually costly fragmentation of the industrial relations system; for example, they jointly lobbied for the introduction of a 2015 "CBA unity law" declaring that only the largest CBA (in share of unionized workers) in an establishment could apply to that establishment. The law was intended to undercut a proliferation of occupation-specific unions representing highly skilled or hard-to-replace workers such as train conductors (*GDL*), who were demanding large wage increases and threatening to strike. Employer associations disliked the high wage demands and threat of strikes; the DGB, perhaps partially motivated by an opportunity to consolidate its power, argued that the demands of specific worker groups would exacerbate inequality and undermine the solidaristic principle of moderating wages at the top in order to boost wages at the bottom (Behrens, 2016).³

2.1.2 The Agreements

The Contents of Collective Agreements As illustrated in Figure 2, unions and employer associations negotiate a range of industry-region level collective agreements (*Flächentarifvertrag*) differentiated by the topics they cover. Wage and salary CBAs (*Lohn- und Gehaltstarifverträge*), usually renegotiated on an annual or biannual basis, specify wage and salary floors for workers in the industry-region, often by occupational, skill, and experience group.⁴ The favorability principle (*Günstigkeitsprinzip*) allows employers to offer higher salaries or better working

³Several large unions, such as ver.di, opposed and even unsuccessfully challenged the law before the Federal Constitutional Court asserting that it curtailed the freedom of association and individual unions' rights to strike (1 BvR 1571/15 -, Rn. 1-24, 1 BvR 571/16 -, Rn. 1-23).

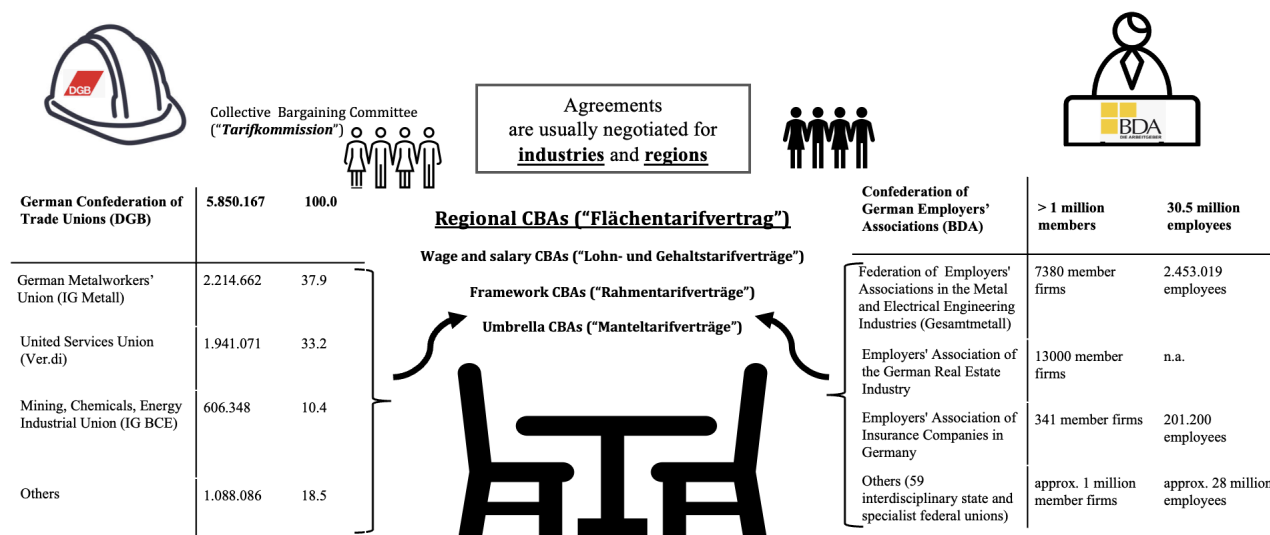
⁴These contracts had a 19-25 month average duration between 2014 and 2020 (Bispinck et al., 2017; Schulten et al., 2021).

conditions than those stipulated in wage and salary CBAs. Longer-running framework CBAs (*Rahmentarifverträge*) define criteria for assigning workers or positions to salary groups. Finally, umbrella agreements (*Manteltarifverträge*) regulate general working conditions, including termination rules, vacation duration, sick leave, and overtime, and are typically in place over longer periods. There are a huge number of active CBAs at any given moment—82,000 in 2021 (Schulten et al., 2021).

For example, a 2021 framework agreement between the metalworkers' union (*IG Metall*) and the corresponding regional employer association (*Südwestmetall*) regulates how workers in the metal and electronics industry in the German state of Baden-Württemberg are assigned to salary groups. It defines a points system, with points assigned for a worker's education and experience as well as the complexity and autonomy of the worker's job.⁵ Separately negotiated CBAs then stipulate wage floors for each points group.

Although CBAs are typically negotiated at the industry-region level, there is substantial coordination in bargaining behavior across regions. Representatives of a national union confederation or umbrella employer organization are usually involved in guiding negotiations in a “pilot” region, and other regions then often imitate the agreement reached in the pilot region, deviating to match local conditions (Schulten and Bispinck, 2018).

Figure 2: The German Bargaining Framework



⁵See *Entgeltrahmen-Tarifvertrag für Beschäftigte in der Metall- und Elektroindustrie in Baden-Württemberg* (Salary Framework CBA for Employees in the Metal and Electronics Industry in Baden-Württemberg) (IG Metall Bezirk Baden-Württemberg, 2021).

Firm-Level Negotiations There is also some scope for firm-level or establishment-level negotiations. First, some (typically very large) individual employers negotiate separate firm-level CBAs with the relevant union (*Firmentarifverträge* and *Haustarifverträge/Werkstarifverträge*). For example, *RAFI GmbH & Co. KG*, an electronics manufacturer of human-machine interface technology, concluded a 2020 agreement with the relevant union (*IG Metall*) which binds *RAFI* to the conditions of the pertinent industry-region-level CBAs, including the ones described above, *and* specifies several additional provisions for *RAFI* employees, including bonus payments and sabbaticals (Wochenblatt-Online, 2020).

Second, “hardship” and “opening” clauses in CBAs allow establishments to negotiate agreements (*Betriebsvereinbarung*) with their works councils that involve deviations below the wage, hour, or amenity requirements imposed by CBAs. (Works councils are shop-floor codetermination institutions that we cover in greater depth in Section 3). These agreements often also have to be approved by the relevant sectoral union and employer association (Schulten and Bispinck, 2018).

Hardship clauses apply only to establishments in severe financial distress, and negotiations under these clauses involve, e.g., workers agreeing to delay the implementation of CBA wage increases until the financial situation of the establishment improves, or agreeing to temporary wage and hour cuts in order to prevent redundancies (Rehder, 2003; Seifert and Massa-Wirth, 2005; ETUI, 2021). The latter kind of agreement, often referred to as an “employment pact,” played an important role in Germany’s response to the Great Recession: along with “short-time work” policies (which provide struggling employers with subsidies to retain their workers at reduced hours), employment pacts helped prevent waves of mass layoffs (Burda and Hunt, 2011; Crimmann, Wießner, and Bellmann, 2012).

Meanwhile, *opening* clauses apply more broadly and allow works councils to negotiate establishment-specific deviations from CBAs in order to match the local conditions of their companies.

2.2 Coverage: Rules and Facts

2.2.1 Rules

The Rules of Coverage A CBA negotiated between a union and an employer association covers all firms belonging to the signatory employer association. Covered firms typically extend coverage to all employees, regardless of their unionization status.⁶ Thus, although only 15% of German workers belong to a union (ETUI, 2021), about 52% are covered by a

⁶The law in principle allows for CBA clauses that benefit only union members (see, e.g., BAG 4 AZR 64/08), but CBAs cannot bar employers from voluntarily extending coverage to non-union employees (BAG 4 AZR 366/09). Firms tend to extend coverage to all employees to reduce individual employees’ incentives to unionize. An important exception are high-paid jobs, e.g., managers or senior engineers, with individually negotiated, above-CBA salaries and working conditions (*Außertariflicher Arbeitsvertrag*); CBAs often leave out these jobs.

collective bargaining agreement (Ellguth and Kohaut, 2020). This stands in striking contrast to the United States, which had a private sector unionization rate of 6.1% in 2021 (BLS, 2022), and where there is no capacity for bargaining coverage to substantially exceed unionization rates.

If supported by a committee composed of union and employer representatives (*Tarifausschuss*), the Labor Ministry can legislatively “extend” a CBA to cover all firms in the relevant industry-region, regardless of membership in the signatory employer association. The threat of legislative extension was historically used to deter firms from exiting CBAs *en masse*, and to prevent “races to the bottom” on wages that would hurt high-wage employers, who supported extensions in order to raise rivals’ costs (Haucap, Pauly, and Wey, 1999). However, extensions have become somewhat less common over time (Müller and Schulten, 2019).

Why Do Employers Opt Into Coverage? A defining feature of German collective bargaining is that participation by employers is largely non-mandatory (with the exception of legislative extensions). Individual employers can opt in or out of coverage by industry-region CBAs by joining or leaving the signatory employer association.⁷ A growing number of employer associations even allow membership without participation in the relevant CBAs (*OT-Mitgliedschaft*, see Behrens and Helfen, 2016). The voluntary nature of CBA coverage is a key contributor to the oft-cited “flexibility” of the German system—and to the recent deterioration in bargaining coverage, as we discuss below.

Why do employers ever choose to join employer associations, thereby imposing CBA restrictions on themselves? First, employers—especially large ones—may face pressure to join from workers and sectoral unions. Second, membership in an association guarantees employers access to peaceful, coordinated, and widely legitimate mechanisms of dispute resolution through sectoral bargaining. In fact, active CBAs preclude unions from strikes pertaining to any matters regulated in the pertinent CBA (*Friedenspflicht*). Third, membership brings various side benefits, including access to strike insurance, legal advice, lobbying support, and professional networking.

2.2.2 Facts about Coverage

Average Coverage As of 2019, 27% of German establishments employing 52% of German workers are covered by a collective bargaining agreement (as shown in Figure 3; Ellguth and Kohaut, 2020). The vast majority of these firms and workers are covered by a sectoral agreement, with a small minority (about 10% of covered establishments and 15% of covered workers) instead subject to a firm-specific agreement. A further 20% of workers are employed

⁷Though the latter usually involves the negotiation of a firm-specific replacement agreement imitating the industry-region CBA, with new margins of flexibility for the firm (Silvia and Schroeder, 2007). Moreover, existing CBAs remain active until expiry for incumbent workers even after the employer has left the employer association (§3 (3) TVG).

by establishments reporting an informal “orientation” towards a CBA (meaning that they imitate the relevant CBA’s prescribed wages and working conditions, but retain discretion to deviate from those prescriptions). Coverage rates are strongly increasing in establishment size, reflecting the higher propensity of larger firms to join employer associations: only 10-20% of establishments with under 100 employees are covered by a collective bargaining agreement, compared to 50-60% of establishments with more than 500 employees (Ellguth and Kohaut, 2020). Larger firms are more likely to join employer associations for several reasons: they tend to be more productive and are hence more likely to pay CBA-compliant wages anyways, they may benefit more from the non-bargaining functions of employer associations (like lobbying) and, finally, unions tend to focus their pressure on large firms.

Formal bargaining coverage in Germany is hence fairly high—substantially exceeding American union coverage even at the latter’s mid-20th-century peak (Farber, Herbst, Kuziemko, and Naidu, 2021)—though significantly lower than coverage rates achieved through national-level bargaining in peer European countries like Sweden or Finland (as Figure 1 shows).

Trends: Erosion and Decentralization The aforementioned statistics reflect a steep drop in German bargaining coverage since the 1990s, when about 70% of German workers were covered. Beginning in the 1990s and continuing mostly unabated since, employer association membership (and hence CBA coverage) have declined substantially, especially among small- and medium-sized firms (Silvia, 1997; Hassel, 1999; Bispinck and Schulten, 2010; Dustmann, Fitzenberger, Schönberg, and Spitz-Oener, 2014; Kügler, Schönberg, and Schreiner, 2018; Boeri, Ichino, Moretti, and Posch, 2021). Informal “orientation” towards CBAs has grown over the same period (Oberfichtner and Schnabel, 2018). Among firms that have remained covered by CBAs, establishment-level wage-setting flexibility has risen substantially with the proliferation since the mid-2000s of general opening clauses that allow firms to negotiate deviations below CBA floors (Silvia and Schroeder, 2007). Representative data on opening clauses is scant and at times conflicting; based on a 2015 survey of works council members, 21% of establishments with at least 20 employees (and a works council) made use of opening clauses, e.g., to pay below-CBA wages (Amlinger and Bispinck, 2015); data from the IAB Establishment Panel show a substantially higher prevalence of opening clauses (see, e.g., Boeri et al., 2021). Finally, large and high-paying firms have increasingly evaded CBAs for their lowest-paid workers by outsourcing jobs to uncovered supplier firms. For example, the proportion of retail establishments with a cleaning worker on staff declined from 82% in 1975 to 20% in 2009, reflecting a huge rise in outsourcing of food, cleaning, security, and logistics jobs in the broader economy (Goldschmidt and Schmieder, 2017).

A confluence of factors plausibly sparked the erosion and decentralization of coverage beginning in the 1990s. First, increasing exposure to foreign competition and a prolonged recession in the 1990s drove many firms—especially small ones—into financial distress

and provoked a flight from employer associations to avoid CBA wage floors (Silvia and Schroeder, 2007; Dustmann, Fitzenberger, Schönberg, and Spitz-Oener, 2014; Raess, 2014). Second, the collapse of the Iron Curtain allowed employers to credibly threaten to outsource manufacturing production to geographically proximate, low-wage Eastern European countries (Dauth, Findeisen, and Suedekum, 2014). This shifted the balance of bargaining power between employers and unions and allowed employers to lobby for the inclusion of opening clauses and other flexibility provisions in CBAs. Unions also began to embrace opening clauses, which allowed them to negotiate firm-level “employment pacts” to protect against the growing threat of layoffs (Schulten and Bispinck, 2018). Third, beginning in the 1980s, growing heterogeneity in productivity across firms and workers may have put the traditional German bargaining model under strain (Silvia, 1997; Dustmann, Ludsteck, and Schönberg, 2009), as in the model of Acemoglu, Aghion, and Violante (2001). Most saliently, small, unproductive employers could not keep up with the wage floors negotiated by employer associations dominated by large, highly productive firms, and hence exited the associations. The extent to which the aforementioned factors explain the decline in bargaining coverage remains an active area of debate.

Looking Ahead The decline in CBA coverage shows no sign of abating. In particular, CBA coverage among each new cohort of entrant firms has dropped over time (Card, Heining, and Kline, 2013), meaning current trends seem likely to continue.

Since the mid-2010s, growing inequality and the expansion of a nascent low-wage sector unconstrained by CBAs has motivated pushback against the erosion and decentralization of wage-setting. First, in 2015, following a successful union campaign, the government introduced Germany’s first federal minimum wage (Marx and Starke, 2017), leading to wage increases at the bottom of the wage distribution and a reallocation of workers to higher-paying firms (Dustmann et al., 2022). Second, as mentioned above in Section 2.1.1, unions and employer associations lobbied successfully for a 2015 “CBA unity” law in an attempt to arrest the gradual fragmentation of bargaining. Third, political parties have declared intentions to mandate broader CBA coverage—either through legislative extensions of CBAs (SPD, 2017, 2021; CDU, 2021), or through mechanisms like the *Gesundheitsversorgungsweiterentwicklungsgesetz* (Health Care Advancement Act 2022), which will restrict public care insurance payments to only long-term care providers that pay CBA-compliant wages.

2.3 Effects on Labor Market Performance

What are the effects of German wage-setting institutions on employment levels and the wage structure? While causal estimates of these effects are scarce, we review and discuss the existing evidence that speaks to this question.

Time-Series Narratives Zooming out to the aggregate time series suggests the following story: the erosion and decentralization of collective bargaining since the 1990s weakened an institution which had previously held up wages at the bottom, constrained wage inequality, and increased unemployment by reducing firm-level wage flexibility. Several patterns support this story. First, beginning in the 1990s, real wages have declined in the lower deciles of the German wage distribution (Dustmann, Ludsteck, and Schönberg, 2009; Dustmann, Fitzenberger, Schönberg, and Spitz-Oener, 2014). Second, earnings inequality has risen dramatically, with about 25% of the increase driven by growing heterogeneity in pay across firms (Card, Heining, and Kline, 2013). Third, the German economy experienced a remarkable resurgence beginning in the mid-2000s, with the unemployment rate dropping from about 10% to about 5%. A leading hypothesis for this resurgence is that declining real wages at the bottom of the distribution boosted the competitiveness of German manufacturing exporters and hence raised employment (Dustmann, Fitzenberger, Schönberg, and Spitz-Oener, 2014).⁸

One inherent limitation of this time series evidence is the presence of other contemporaneous changes, like globalization and skill-biased technological change; in fact, the erosion of collective bargaining may itself have been an outcome of these forces (Acemoglu, Aghion, and Violante, 2001; Dustmann, Fitzenberger, Schönberg, and Spitz-Oener, 2014). Time series narratives about the effects of strong sectoral bargaining tend to be quite flexible: in the 1950s-1980s, Germany's strong performance was attributed to the bright side of sectoral bargaining (Silvia, 1997), a narrative that flipped in the 1990s (Ochel, 2005; Schulten and Bispinck, 2018) and is beginning to change again following Germany's success since the late 2000s.

International Comparisons Time-series narratives focusing on the decentralization of German bargaining are consistent with cross-country comparisons demonstrating that the German bargaining system is now unusually flexible relative to industry-level bargaining structures in peer countries like France and Italy. As reproduced in Figure 4, Boeri, Ichino, Moretti, and Posch (2021) show that the German system—thanks to non-mandatory employer participation, the regionalization of sectoral bargaining, and the spread of opening clauses—allows wages to vary according to regional productivity and hence maintains high employment rates everywhere, even in lower-productivity areas, particularly East Germany. By contrast, the Italian system—which imposes uniform wage floors across all regions with limited local wage adjustments—largely delinks wages from regional productivity and hence depresses employment in low-productivity regions, such as Southern Italy. Again, these results are consistent with claims that the more rigid 20th-century German bargaining system compressed

⁸An important alternative hypothesis is that the Hartz reforms of the early 2000s, which cut the generosity of unemployment benefits and reformed active labor market policies, contributed to the decline in unemployment (see, e.g., Krebs and Scheffel, 2013; Price, 2018).

wages at the expense of elevated unemployment, and reforms to the bargaining system since the 1990s have resulted in greater wage dispersion but increased employment.

Firm-Level Evidence An alternative source of evidence comes from firm-level analyses. Overall, these results are consistent with the contemporary collective bargaining system slightly raising mean wages, compressing within-firm wage distributions, and raising the *average* proportion of rents that are shared with workers but reducing firm-specific rent-sharing elasticities by reducing establishment-level wage-setting discretion. More specifically, *uncontrolled* cross-sectional comparisons of firms covered and uncovered by sectoral bargaining indicate 10-30% higher average wages in covered firms (Dustmann and Schönberg, 2009; Addison, Teixeira, Evers, and Bellmann, 2016); however, controlling for worker and firm characteristics reduces the coverage wage premium to about 2% (Hirsch and Mueller, 2020). Event-study analyses comparing firms entering and exiting collective bargaining agreements to control firms suggest a similar premium of around 3-4% (Addison, Teixeira, Evers, and Bellmann, 2014, 2016). Increases in profits or productivity are passed on to workers more so in uncovered firms (Gürtzgen, 2009), but wages conditional on (static) rents are higher in covered firms Hirsch and Mueller (2020). Meanwhile, within-firm wage dispersion tends to be substantially lower in firms covered by collective agreements (Dustmann and Schönberg, 2009), which also invest more in apprenticeship training (in line with theories of wage compression and training provision; Acemoglu and Pischke, 1999).

As coverage is largely voluntary in Germany, these firm-level comparisons need not only reflect the causal effect of coverage. They may at least partially reflect that the firms opting into collective agreements are those that would pay high and compressed wages anyways. There is no existing source of identification mirroring the close union election regression discontinuity design in the US (DiNardo and Lee, 2004; Lee and Mas, 2012; Wang and Young, 2022), or sharp policy variation as in Portugal (Hijzen and Martins, 2020). More broadly, even an ideal firm-level experiment would leave open the question of equilibrium effects of the sectoral bargaining system, which may create market spillovers or foster important norms and expectations about pay (witness the phenomenon of “orientation” to CBA wages by uncovered firms, and see also Falk, Fehr, and Zehnder, 2006; Western and Rosenfeld, 2011).

2.4 The Effects on Industrial Relations

In addition to its direct effects on labor market outcomes, the collective bargaining system is central to shaping German industrial relations, which are built around the “social partnership” between union confederations and employer associations. Germany has remarkably peaceful and friendly industrial relations compared to peer countries, including the US (Dustmann, Fitzenberger, Schönberg, and Spitz-Oener, 2014; Jäger, Noy, and Schoefer, 2022b), and the

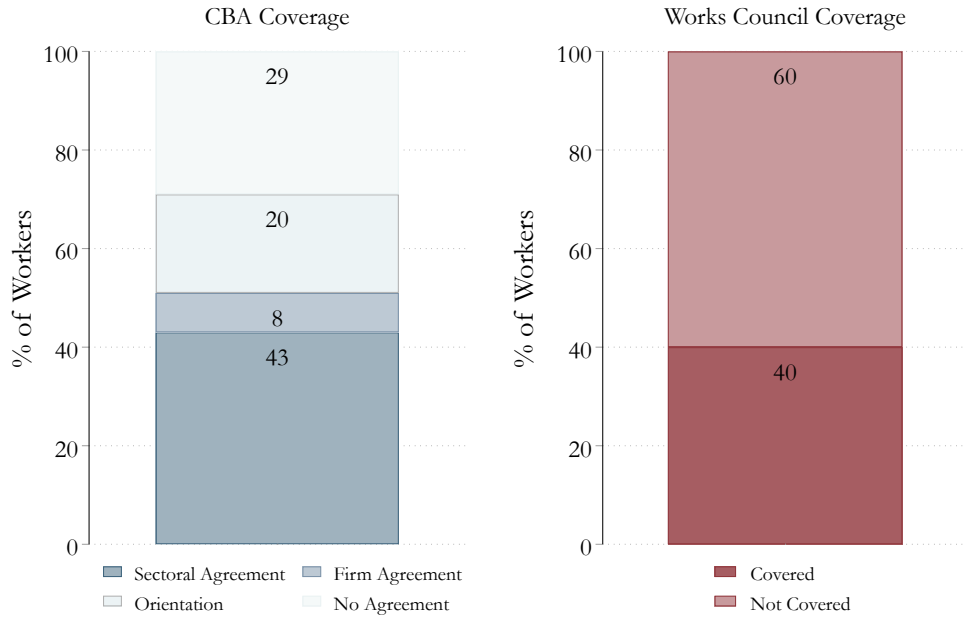
collective bargaining system plausibly contributes to this through two key mechanisms.

First, sectoral bargaining elevates zero-sum bargaining over the division of rents to the level of industry-region associations, meaning that individual employers and their workers are not engaged in bitter fights over wages and hours, as often happens in more adversarial systems such as the US (Moene, Wallerstein, and Hoel, 1992). When negotiations do take place at the establishment level (under opening clauses), these negotiations still occur in the shadow of the industry-region associations and higher-level agreements; the increasing number of firms reporting that they informally "orient" their pay policies according to the relevant CBA suggests that pay setting norms created by CBAs extend beyond their formal jurisdictions.

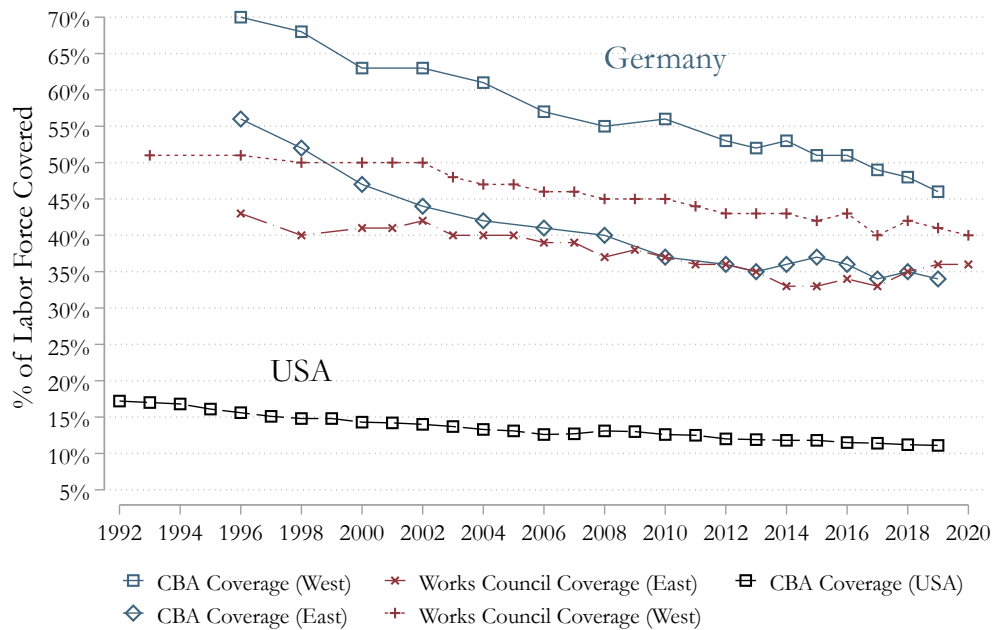
Second, employers' ability to opt in or out of collective bargaining coverage, and the decoupling of bargaining coverage from establishment-level union membership, eliminates individual employers' incentives to crack down on union activity in the firm.

Figure 3: Collective Bargaining and Works Council Coverage

(a) Coverage Today

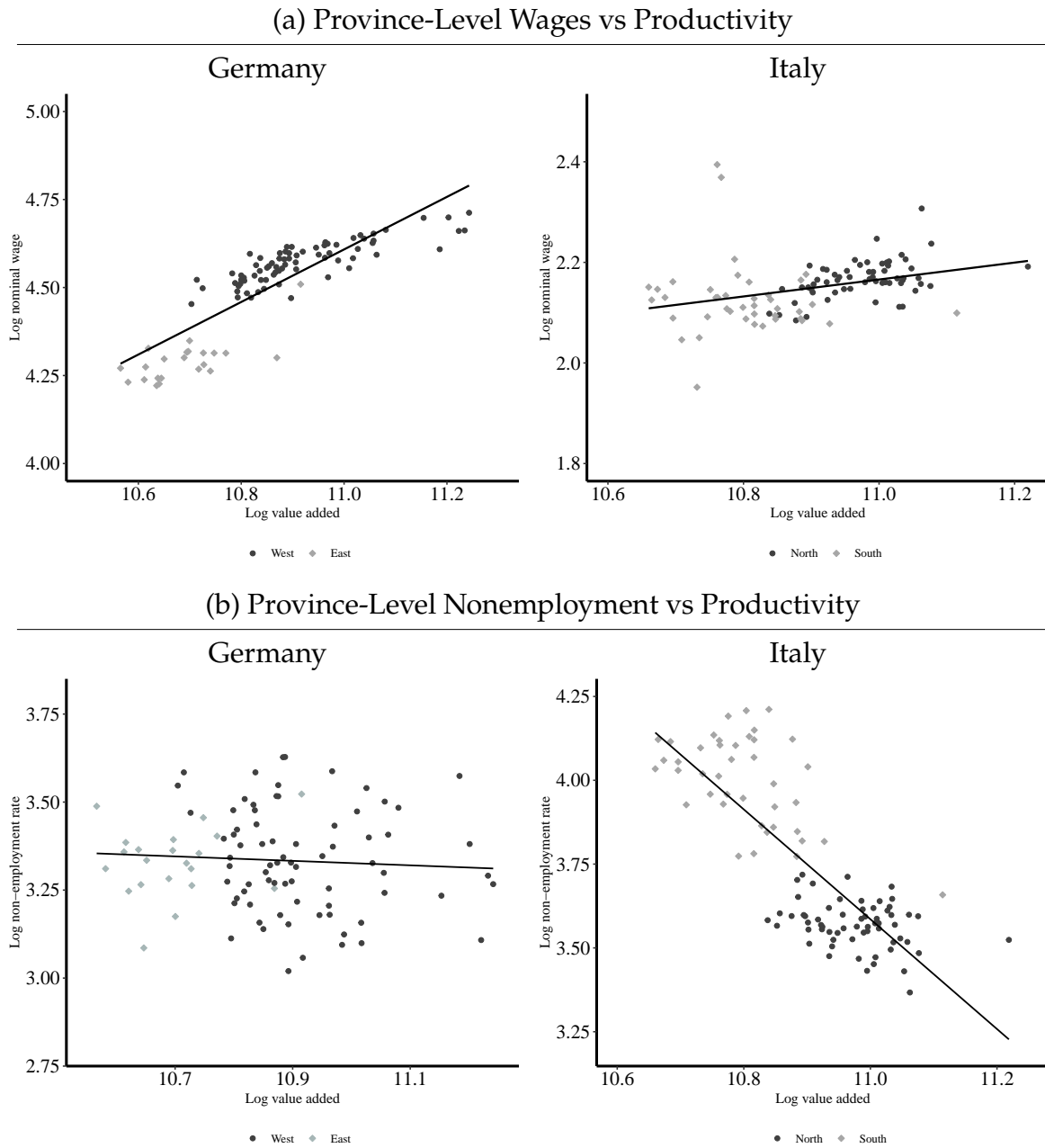


(b) Trends in Coverage



Notes: Panel (a) illustrates the share of German workers covered by collective bargaining agreements and works councils in 2020. Panel (b) shows the time series of coverage, with bargaining coverage in the US added for comparison. Source: Ellguth and Kohaut (2020) for the German numbers, Visser (2021) for the US numbers.

Figure 4: Collective Bargaining Flexibility in Germany and Italy (reproduction from Boeri, Ichino, Moretti, and Posch, 2021)



Note: This figure reproduces Figures 4 and 6 of Boeri, Ichino, Moretti, and Posch (2021). Panels (a) and (b) show scatterplots (each dot representing a province) of mean log wages against mean log value added, separately for Germany and Italy. Panels (c) and (d) show province-level scatterplots of log nonemployment against mean log value added, again separately for Germany and Italy. The distinction between West/East Germany is analogous to the distinction between North/South Italy, in that the former region tends to be wealthier and more productive in each case. Data are from 2010.

3 Codetermination

The second pillar of German industrial relations is codetermination (*Mitbestimmung*)—legally mandated integration of workers into corporate governance and decision-making. German codetermination comes in two forms: appointment of worker representatives to company boards (“board-level codetermination”), and the election of establishment- and firm-level “works councils” tasked with participating in day-to-day decision-making (“shop-floor codetermination”). Figure 5 Panel (a) illustrates how board-level and shop-floor codetermination incorporate workers into firms’ decision-making hierarchies. Corporate governance under codetermination contrasts with the American system of corporate governance, where control of firms rests solely in the hands of executives, shareholders, and owners.

In this section, we describe how codetermination operates in practice, illustrate its interaction with industry-level bargaining, and review evidence on its effects.

3.1 Board Representation

Germany was the first country to implement wide-scale board-level codetermination, through reforms in 1948, 1952, and 1976.⁹ Other European countries later followed suit; however, board-level codetermination remains rare internationally, with fewer than 20 countries featuring the institution today (see, e.g., Jäger, Noy, and Schoefer, 2022b).

Codetermination Laws Board-level codetermination laws generally apply to German firms with more than 500 employees, and mandate the appointment of worker representatives to supervisory boards. Unlike the American unitary board system, German firms typically have two boards: a supervisory and an executive board. The supervisory board consists of shareholder representatives (and potentially worker representatives), and it selects and oversees the firm’s executive board, which is composed of senior executives and is tasked with day-to-day management of the firm. The supervisory board also participates in major decisions, such as decisions about large investments or significant changes to company operations.

Minority, Quasi-Parity, and Parity Representation There are three tiers of board-level codetermination requirements, applying to different groups of German firms (Jäger, Schoefer, and Heining, 2021; ETUI, 2021). These tiers are visualized in Panel (b) of Figure 5. First, under “minority representation,” firms with between 500 and 2,000 employees (and stock corporations

⁹Following WWII, the British occupiers imposed “parity” codetermination requirements on firms in the iron, coal, and steel sectors, to break up the power of industry leaders who had helped drive both World Wars. Lobbying campaigns by German unions later led to the extension of the institution (in a substantially weaker form) to all sectors by legislation passed in 1952 and 1976. See Jäger, Noy, and Schoefer (2022a) for more historical background.

incorporated before August 1994, regardless of size) must appoint worker representatives to 33% of the seats on their supervisory board. In these firms, the worker representatives are company employees directly elected by workers. Second, under “quasi-parity representation,” firms with more than 2,000 employees must appoint worker representatives to 50% of the seats on their supervisory board, though shareholder representatives receive a casting vote. In these firms, some worker representatives are elected company employees, others are external representatives of the union covering the company’s workforce, and at least one is chosen by senior managers as a representative of their interests as employees. Finally, there exists true “parity representation,” where 50% of the seats go to workers and shareholder representatives do *not* receive a casting vote (instead, a neutral chair, appointed by majorities of both the shareholder and worker representatives, holds the deciding vote). However, parity representation is limited to firms with more than 1,000 employees in the iron, coal, and steel sectors, as a political relic of WWII (see Footnote 9). In these firms, worker representatives are again a mix of elected company employees and external union officials, plus one member elected by the company’s managers. Quasi-parity and parity representation are unique to Germany, and are the strongest forms of board-level codetermination in the world; all other countries that have passed board-level codetermination laws have implemented minority representation (Jäger, Noy, and Schoefer, 2022b).

Rights and Duties Worker representatives have the same rights and obligations as shareholder representatives: they can vote on any matter that comes before the supervisory board, and have a fiduciary duty to the company (rather than to workers, which leads to occasional tensions; Gold, Kluge, and Conchon, 2010, p.76, 77, 84). This facet of codetermination hence gives workers voice in major strategic decisions. For example, representatives describe lobbying for more generous pension plans, alerting shareholder representatives to job security and task duplication issues following a merger or acquisition, providing input on the construction of new company buildings, and pushing back against a focus on maximizing short-run returns (Gold, Kluge, and Conchon, 2010, p.74, 84, 85, 94). They also describe collaborating with works councils or union representatives, to coordinate messaging or jointly lobby for legislative changes (Gold, Kluge, and Conchon, 2010, p.76, 96, 97).

Labor in the Boardroom Anecdotally, the relationships between worker and shareholder representatives on supervisory boards are friendly and collaborative; indeed, surveys show that most German executives are broadly supportive of board-level codetermination laws (Paster, 2012), with some evidence that minority codetermination is viewed more favorably and quasi-parity codetermination is more likely to be opposed (Stettes, 2007). Shareholder representatives appreciate the insights into workers’ preferences and company operations provided by worker representatives (Gold, Kluge, and Conchon, 2010, p.93). Votes on

supervisory boards are usually unanimous (Gold, Kluge, and Conchon, 2010), though this is shaped by the background majorities held by shareholder representatives. Since workers are in the minority on the supervisory board, their direct power is limited. When interviewed, board-level representatives are candid about the limitations they face:

“We have to accept that, formally, we are not in a position to form majorities on the supervisory board...” (Gold, Kluge, and Conchon, 2010, p.74)

“[The role is] not that important as the power behind it is less than it seems to be.” (Gold, Kluge, and Conchon, 2010, p.82)

The Effects of Board-Level Codetermination The available evidence confirms limited effects of board-level representation on (e.g.) wage-setting or investment (Jäger, Schoefer, and Heining, 2021). Firms also do not appear to bunch below the relevant size thresholds to avoid codetermination requirements (Jäger, Noy, and Schoefer, 2022b), and a large literature using cross-sectional comparisons or simple regression-discontinuity designs finds mixed effects of the institution (Conchon, 2011). According to anecdotal reports, board-level representatives may complement unions’ and works councils’ activities, e.g., by sharing information gained from board activities. Similarly, board-level codetermination has been hypothesized to contribute to the general environment of cooperation and social partnership that characterizes German industrial relations (Thelen, 2014).

3.2 Works Councils

The second facet of German codetermination is the works council system, which dates back to the Stinnes-Legien Agreement of 1918 and the Works Council Act of 1920 (Jäger, Noy, and Schoefer, 2022a). Works councils are committees of representatives elected by workers who have rights to participate in a variety of managerial decisions; they typically are a form of lower-level, “shop-floor” codetermination that complements board-level codetermination, although firms with multiple works councils across establishments also have a firm-level works council (*Gesamtbetriebsrat*). German works councils possess broader and stronger co-decision-making rights than board-level representatives—who, as we have noted, lack formal power due to their minority share on boards—and than other European countries’ often anemic shop-floor codetermination institutions.

Codetermination Laws Rather than a mandate, German law gives workers in any establishment with at least 5 employees the *right* to form a works council. If a works council is set up, the number of representatives on the council scales with the establishment’s size,¹⁰ and there are

¹⁰The number of councillors increases from, e.g., 1 in establishments with 5-20 workers to 7 in establishments with 101-200 workers to 15 in establishments with 1,001-1,500 workers (ETUI, 2021).

quotas for gender representation (ETUI, 2021). Responsibilities also scale with establishment size. As Panel (b) of Figure 5 illustrates, in larger establishments, the works council sets up various subsidiary committees: a health and safety committee (in establishments with > 50 workers), an economic committee (> 100) that scrutinizes company financials and is consulted on related matters, and a works committee (> 200) that deals with day-to-day managerial issues. Additionally, in larger establishments (> 200), some works council members are allowed to perform these duties full-time.

Coverage About 9% of establishments with at least 5 employees have a works council; since larger establishments are more likely to have works councils, almost 40% of German workers are covered by a works council (Ellguth and Kohaut, 2020). As Figure 3 shows, these coverage numbers represent a slight decline since the early 1990s, when about 50% of workers were covered by a works council.

Powers Works councils have a spectrum of powers applying to different domains of decision-making. At the weakest end, they have various information and consultation rights: a right to be kept informed about the company's financial situation, and a right to be consulted about planned changes that might affect workers, including changes to work methods, training, and health and safety procedures, though the employer usually has no obligation to follow their advice. Moving to the stronger end, works councils can veto transfers, dismissals, or appointments of employees if they can show that the employer has acted unfairly or violated an existing agreement. Employers can appeal to a labor court to override the veto. At the very strongest end are full co-decision-making rights regarding working hours, vacations, workplace monitoring, bonuses and payment schemes, redundancy payments, and workplace amenities. In these areas, decisions must be jointly reached and approved by the employer and the works council; both sides can initiate proposals. Works councils cannot initiate strikes. Disagreements are adjudicated by a conciliation committee (consisting of worker and employer representatives and chaired by a neutral arbiter who holds the casting vote). Works councils are also responsible for the increasingly important job of negotiating over firm-level deviations from CBA requirements.

The Effects of Works Councils There is a long empirical literature that compares firms and establishments with and without works councils, finding that works councils are typically associated with slightly higher wages and productivity and more compressed wage distributions (Addison, 2009; Jirjahn and Smith, 2018; Adam, 2019; Hirsch and Mueller, 2020; Schnabel, 2020). However, the voluntary nature of works council coverage and the low employment threshold for workers' right to demand one makes causal inference difficult. In general, it is plausible that works councils are more directly impactful than board-level codetermination,

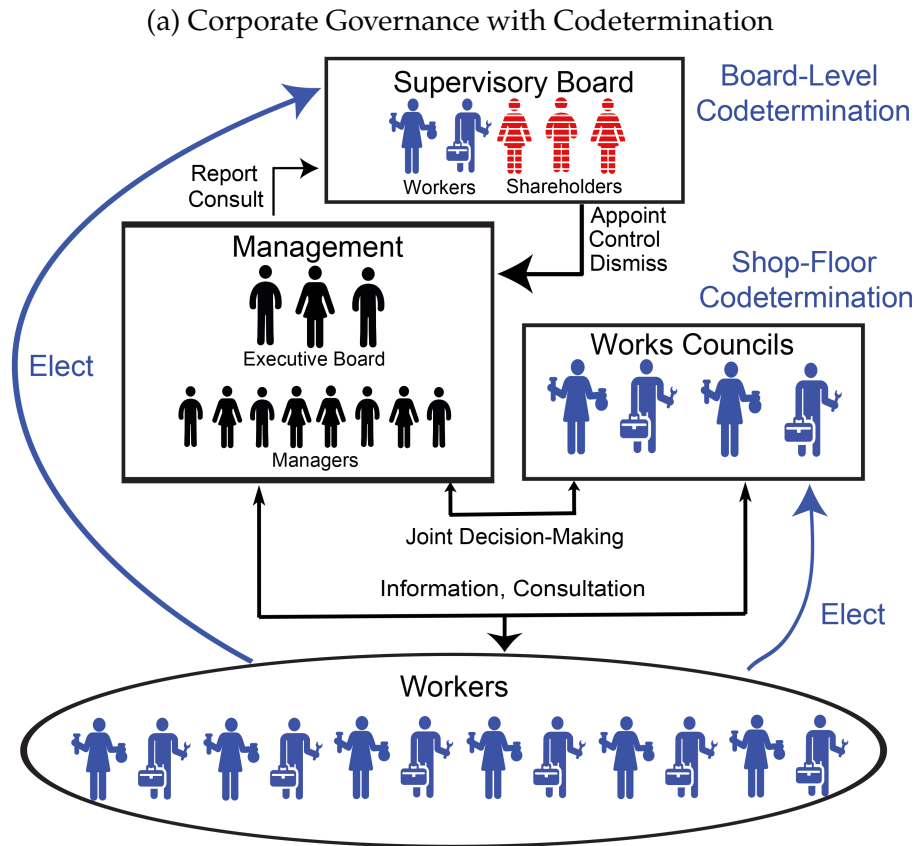
given that councillors are allocated a variety of direct decision-making powers that board-level representatives lack, and interact more often with workers (at the shop floor). However, due to a lack of sharp and exogenous variation, the effects of works councils on worker and firm outcomes remain an open research question.

3.3 Codetermination and Unions

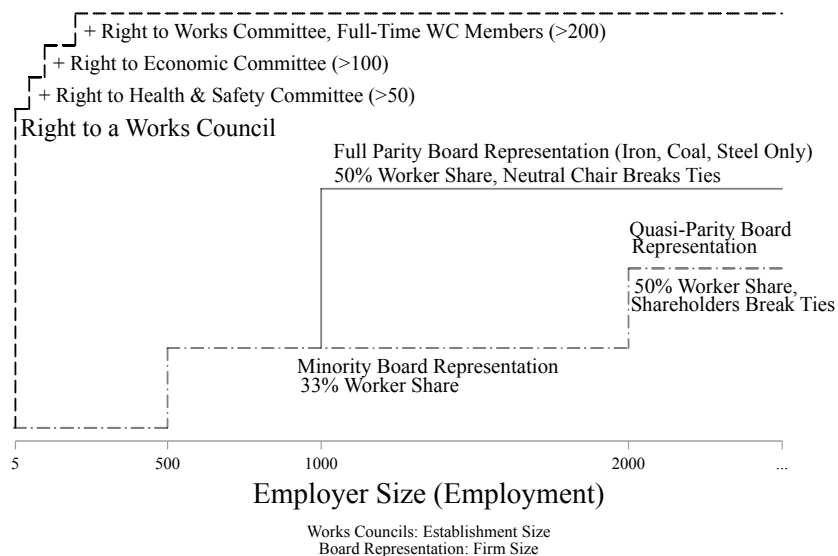
Although works councils were originally explicitly subordinate to trade unions and board-level codetermination was in large part a product of union lobbying, since the 1950s German law has maintained a clear legal separation between codetermination and union associations (Jäger, Noy, and Schoefer, 2022b). However, in practice there are often close relationships: board representatives and works council members frequently occupy leadership positions in unions, and sometimes inform unions' bargaining strategies (Gold, Kluge, and Conchon, 2010). Unions are also closely involved in the procedures to set up works councils and works council elections frequently feature political-party-style union lists (ETUI, 2021). Works councils are also formally tasked with monitoring compliance with collective bargaining agreements and employment regulations (§80 Works Council Act).

The distinction between cooperative codetermination and adversarial bargaining has also blurred with the ongoing proliferation of opening clauses and local negotiations handled by works councils. This has shifted Germany somewhat closer to the Nordic codetermination model, where local union representatives hold both codetermination and negotiation/bargaining rights.

Figure 5: Codetermination



(b) Codetermination Laws by Employer Size



Notes: Panel (a) illustrates the structure of German corporate governance under codetermination laws, and Panel (b) illustrates codetermination rules that kick in across the employer size distribution.

4 Conclusion

Overall, the contemporary German model shows that powerful unions and a robust collective bargaining system are compatible with relatively friendly and peaceful industrial relations and with the avoidance of distortionary pitfalls traditionally associated with strong labor power. Several features of the model support friendly industrial relations: (i) the outsourcing of most distributional conflicts to the industry-region (rather than firm) level; (ii) the decoupling of bargaining coverage from workers' unionization status, which reduces employers' incentives to oppose unionization; and (iii) the institutionalization of worker-management cooperation through codetermination. The result has been a long history of unusually harmonious industrial relations stretching back to the 1950s. Meanwhile, the (increasing) ease of nonparticipation in collective bargaining, the proliferation of opening clauses and other flexibility provisions, and the regionalization of bargaining mean that the contemporary German system seems much less likely to reduce employment, exclude potential labor market entrants, or slow down growth than sectoral bargaining systems in peer countries with more comprehensive and stricter coverage rules.

At the same time, the increasing flexibility of the German system means that Germany is no longer a poster child for strong sectoral bargaining (a policy that has been explored by US policymakers). CBA coverage in Germany is middling, and decreasing. The flexibility to which Germany's strong macroeconomic performance is often attributed implies the omission of large segments of the labor market from bargaining coverage. Germany now faces challenges that its historically more rigid industrial relations system used to suppress: significant increases in earnings inequality, the spread of precarious work, and the gradual expansion of a low-wage sector that is now larger than the OECD average (though still 25% smaller than in the US).

Frustration with these developments has led to the introduction of a more rigid national minimum wage, and louder calls to strengthen both pillars of worker representation. Plans are under way to extend collective bargaining coverage to more employers, e.g., by formally extending more CBAs and by making public procurement contingent on CBA compliance (Koalitionsvertrag, 2021). Members of the governing coalition also plan to make it easier to prosecute employers who (illegally) oppose works council elections, to facilitate works councils for gig and platform workers, and to close some loopholes that allow evasion of board-level codetermination (Koalitionsvertrag, 2021; Handelsblatt, 2022). Beyond legislative changes, the German industrial relations system will continue to adapt organically in response to changing circumstances, e.g., evidenced by remote work provisions in many collective bargaining agreements since the beginning of the COVID-19 pandemic. More broadly, it is likely that the German model of industrial relations will continue to evolve in response to the aforementioned challenges, as fault lines that opened up in the 2000s continue to widen.

Bibliography

- Acemoglu, Daron, Philippe Aghion, and Giovanni Violante. 2001. "Deunionization, Technical Change, and Inequality." *Carnegie-Rochester Conference Series on Public Policy* 55.
- Acemoglu, Daron and Jörn-Steffen Pischke. 1999. "The Structure of Wages and Investment in General Training." *Journal of Political economy* 107 (3):539–572.
- Acemoglu, Daron and Pascual Restrepo. 2020. "Robots and Jobs: Evidence from US Labor Markets." *Journal of Political Economy* 128 (6):2188–2244.
- Adam, Julian. 2019. "Voluntary Quits: Do Works Councils Matter? An Analysis of the Reform of the German Works Constitution Act 2001." *Jahrbücher für Nationalökonomie und Statistik* 239 (1).
- Addison, John. 2009. *The Economics of Codetermination: Lessons from the German Experience*. Palgrave Macmillan.
- Addison, John, Paulino Teixeira, Katalin Evers, and Lutz Bellmann. 2014. "Indicative and Updated Estimates of the Collective Bargaining Premium in Germany." .
- Addison, John T, Paulino Teixeira, Katalin Evers, and Lutz Bellmann. 2016. "Is the Erosion Thesis Overblown? Alignment from Without in Germany." *Industrial Relations: A Journal of Economy and Society* 55 (3):415–443.
- Amlinger, Marc and Reinhard Bispinck. 2015. "Dezentralisierung der Tarifpolitik." *WSI-Mitteilungen* .
- Autor, David, David Dorn, and Gordon Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *American Economic Review* 103 (6):2121–2168.
- Autor, David H. 2014. "Skills, Education, and the Rise of Earnings Inequality Among the "Other 99 Percent"." *Science* 344 (6186):843–851.
- BBC. 2012. "German Economic Strength: The Secrets of Success." '<https://www.bbc.com/news/business-18868704>' accessed April-04-2022.
- BDA. 2021. "Die Arbeitgeber Zur 20. Legislaturperiode." '<https://arbeitgeber.de/newsroom/wirtschaft-sind-wir-alle/>' accessed April-04-2022.
- BDI. 2021. "Wahlprogramm-Check zur Bundestagswahl 2021." '<https://bdi.eu/#/publikation/news/wahlprogramm-check-zur-bundestagswahl-2021-investitionen-klimaschutz-innovationen-digitalisierung/>' accessed April-04-2022.

- Behrens, Martin. 2016. *Developments in German Industrial Relations*, chap. Employment Relations in Germany. Cambridge Scholars Publishing.
- Behrens, Martin and Markus Helfen. 2016. "Sachzwang oder Programm? Tarifpolitische Orientierungen und OT-Mitgliedschaft bei deutschen Arbeitgeberverbänden." *WSI-Mitteilungen* 69 (6):452–459.
- Bispinck, Reinhard, Götz Bauer, Marion Frömming, Ulrich Schmidt, Monika Schwacke-Pilger, Andrea Taube, Monika Wiebel, and Jasmina Ziouziou. 2017. *2021 Tarifpolitik - Statistisches Taschenbuch*.
- Bispinck, Reinhard and Thorsten Schulten. 2010. "Sector-Level Bargaining and Possibilities for Deviations at Company-Level: The Case of Germany." *Paper for the Eurofound Project: "The functioning of sector level wage bargaining systems and wage setting mechanisms in adverse labour market conditions"*, May .
- BLS. 2022. "Union Members—2021." '<https://www.bls.gov/news.release/pdf/union2.pdf>' accessed March-02-2022.
- Boeri, Tito, Andrea Ichino, Enrico Moretti, and Johanna Posch. 2021. "Wage Equalization and Regional Misallocation: Evidence from Italian and German Provinces." *Journal of the European Economic Association* 19 (6):3249–3292.
- Burda, Michael and Jennifer Hunt. 2011. "What Explains the German Labor Market Miracle in the Great Recession?" *NBER Working Paper* .
- Card, David, Jörg Heining, and Patrick Kline. 2013. "Workplace Heterogeneity and the Rise of West German Wage Inequality." *The Quarterly Journal of Economics* 128 (3):967–1015.
- Card, David, Thomas Lemieux, and W Craig Riddell. 2020. "Unions and Wage Inequality: The Roles of Gender, Skill and Public Sector Employment." *Canadian Journal of Economics/Revue canadienne d'économique* 53 (1):140–173.
- CDU. 2021. "Alle Wahlprogramme für die Bundestagswahl 2021." '<https://www.bundestagswahl-2021.de/wahlprogramme/#cdu>' accessed March-02-2022.
- Chancel, Lucas, Thomas Piketty, Emmanuel Saez, and Gabriel Zucman. 2022. "World Inequality Report 2022." 'https://wir2022.wid.world/www-site/uploads/2022/03/0098-21_WIL-RIM_RAPPORT_A4.pdf' accessed April-04-2022.
- Conchon, Aline. 2011. "Board-Level Employee Representation Rights in Europe: Facts and Trends." *European Trade Union Institute Report* 121 .

- Crimmann, Andreas, Frank Wießner, and Lutz Bellmann. 2012. "Resisting the Crisis: Short-Time Work in Germany." *International Journal of Manpower* .
- Dauth, Wolfgang, Sebastian Findeisen, and Jens Suedekum. 2014. "The Rise of the East and the Far East: German Labor Markets and Trade Integration." *Journal of the European Economic Association* 12 (6):1643–1675.
- Dauth, Wolfgang, Sebastian Findeisen, Jens Suedekum, and Nicole Woessner. 2021. "The Adjustment of Labor Markets to Robots." *Journal of the European Economic Association* 19 (6):3104–3153.
- DGB. 2021. "Mitgliederzahlen 2021." '<https://www.dgb.de/uber-uns/dgb-heute/mitgliederzahlen/2020-2029>' accessed March-02-2022.
- DiNardo, John and David Lee. 2004. "Economic Impacts of New Unionization on Private Sector Employers: 1984-2001." *Quarterly Journal of Economics* 119 (4):1383–1441.
- Dustmann, Christian, Bernd Fitzenberger, Uta Schönberg, and Alexandra Spitz-Oener. 2014. "From Sick Man of Europe to Economic Superstar: Germany's Resurgent Economy." *Journal of Economic Perspectives* 28 (1):167–88.
- Dustmann, Christian, Attila Lindner, Uta Schönberg, Matthias Umkehrer, and Philipp Vom Berge. 2022. "Reallocation Effects of the Minimum Wage." *The Quarterly Journal of Economics* 137 (1):267–328.
- Dustmann, Christian, Johannes Ludsteck, and Uta Schönberg. 2009. "Revisiting the German Wage Structure." *The Quarterly Journal of Economics* 124 (2):843–881.
- Dustmann, Christian and Uta Schönberg. 2009. "Training and Union Wages." *The Review of Economics and Statistics* 91 (2):363–376.
- Ellguth, Peter and Susanne Kohaut. 2020. "Tarifbindung und betriebliche Interessenvertretung: Aktuelle Ergebnisse aus dem IAB-Betriebspanel 2019." *WSI-Mitteilungen* 73 (4):278–285.
- ETUI. 2021. "National Industrial Relations: Countries." '<https://www.worker-participation.eu/National-Industrial-Relations/Countries>' accessed March-02-2022.
- Falk, Armin, Ernst Fehr, and Christian Zehnder. 2006. "Fairness Perceptions and Reservation Wages—the Behavioral Effects of Minimum Wage Laws." *The Quarterly Journal of Economics* 121 (4):1347–1381.

- Farber, Henry, Daniel Herbst, Ilyana Kuziemko, and Suresh Naidu. 2021. "Unions and Inequality Over the Twentieth Century: New Evidence from Survey Data." *Quarterly Journal of Economics* 136 (3):1325–1385.
- Frandsen, Brigham. 2021. "The Surprising Impacts of Unionization: Evidence from Matched Employer-Employee Data." *Journal of Labor Economics* 39 (4).
- Gold, Michael, Norbert Kluge, and Aline Conchon. 2010. *'In the Union and on the Board': Experiences of Board-Level Employee Representatives across Europe*. European Trade Union Institute.
- Goldschmidt, Deborah and Johannes F Schmieder. 2017. "The Rise of Domestic Outsourcing and the Evolution of the German Wage Structure." *The Quarterly Journal of Economics* 132 (3):1165–1217.
- Grossman, Gene and Ezra Oberfield. 2021. "The Elusive Explanation for the Declining Labor Share." *NBER Working Paper* .
- Gürtzgen, Nicole. 2009. "Rent Sharing and Collective Bargaining Coverage: Evidence from Linked Employer-Employee Data." *The Scandinavian Journal of Economics* 111 (2).
- Handelsblatt. 2022. "Arbeitsminister Heil will Bundesaufträge nur noch an Unternehmen mit Tarifvertrag vergeben." '<https://www.handelsblatt.com/politik/deutschland/arbeitsmarkt-arbeitsminister-heil-will-bundesauftraege-nur-noch-an-unternehmen-mit-tarifvertrag-vergeben/27998704.html>' accessed April-04-2022.
- Harlin, Julia. 1982. "First National Maintenance Corp. V. NLRB: The Supreme Court Narrows Employers' Section 8(A)(5) Duty to Bargain." *Washington and Lee Law Review* 39 (1):285–302.
- Hassel, Anke. 1999. "The Erosion of the German System of Industrial Relations." *British Journal of Industrial Relations* 37 (3):483–505.
- Haucap, Justus, Uwe Pauly, and Christian Wey. 1999. "The Incentives of Employers' Associations to Raise Rivals' Costs in the Presence of Collective Bargaining." *WZB Discussion Paper* .
- Hertel-Fernandez, Alex, William Kimball, and Thomas Kochan. 2022. "What Forms of Representation Do American Workers Want? Implications for Theory, Policy, and Practice." *ILR Review* 75 (2).
- Hijzen, Alexander and Pedro Martins. 2020. "No Extension Without Representation? Evidence from a Natural Experiment in Collective Bargaining." *IZA Journal of Labor Economics* 9 (1).

- Hirsch, Boris and Steffen Mueller. 2020. "Firm Wage Premia, Industrial Relations, and Wage Sharing in Germany." *ILR Review* 73 (5):1119–1146.
- IFR. 2017. *World Robotics 2017: Industrial Robots*. International Federation of Robotics, VDMA.
- IG Metall Bezirk Baden-Württemberg. 2021. "Entgeltrahmen-Tarifvertrag für Beschäftigte der Metall- und Elektroindustrie in Baden-Württemberg." '<https://www.bw.igm.de/tarife/tarifvertrag.html?id=696>' accessed March-02-2022.
- Jäger, Simon, Shakked Noy, and Benjamin Schoefer. 2022a. "Codetermination and Power in the Workplace." *Economic Policy Institute Working Paper*.
- . 2022b. "What Does Codetermination Do?" *ILR Review*.
- Jäger, Simon, Benjamin Schoefer, and Jörg Heining. 2021. "Labor in the Boardroom." *Quarterly Journal of Economics* 136 (2):669–725.
- Jirjahn, Uwe and Stephen Smith. 2018. "Nonunion Employee Representation: Theory and the German Experience With Mandated Works Councils." *Annals of Public and Cooperative Economics* 89 (1):201–233.
- Karabarbounis, Loukas and Brent Neiman. 2014. "The Global Decline of the Labor Share." *Quarterly Journal of Economics* 129 (1):61–103.
- Koalitionsvertrag. 2021. "Koalitionsvertrag 2021 – 2025 zwischen der Sozialdemokratischen Partei Deutschlands (SPD), BÜNDNIS 90 / DIE GRÜNEN und den Freien Demokraten (FDP)." URL https://www.spd.de/fileadmin/Dokumente/Koalitionsvertrag/Koalitionsvertrag_2021-2025.pdf.
- Kochan, Thomas, Duanyi Yang, William Kimball, and Erin Kelly. 2019. "Worker Voice in America: Is There a Gap between What Workers Expect and What They Experience?" *ILR Review* 72 (1):3–38.
- Krebs, Tom and Martin Scheffel. 2013. "Macroeconomic Evaluation of Labor Market Reform in Germany." *IMF Economic Review* 61 (4):664–701.
- Kügler, Alice, Uta Schönberg, and Ragnhild Schreiner. 2018. "Productivity Growth, Wage Growth and Unions." In *Price and Wage-Setting in Advanced Economies*, vol. 2018. ECB, 215–247.
- Lee, David and Alexandre Mas. 2012. "Long-Run Impacts of Unions on Firms: New Evidence from Financial Markets, 1961-1999." *Quarterly Journal of Economics* 127 (1):333–378.

- Lesch, Hagen. 2009. "Erfassung und Entwicklung von Streiks in OECD-Ländern." *Institut der deutschen Wirtschaft Trends* .
- Marx, Paul and Peter Starke. 2017. "Dualization as Destiny? The Political Economy of the German Minimum Wage Reform." *Politics & Society* 45 (4):1–20.
- Mishel, Lawrence and Jori Kandra. 2021. "Wage Inequality Continued to Increase in 2020." 'https://www.epi.org/blog/wage-inequality-continued-to-increase-in-2020-top-1-0-of-earners-see-wages-up-179-since-1979-while-share-of-wages-for-bottom-90-hits-new-low/' accessed April-04-2022.
- Moene, Karl Ove, Michael Wallerstein, and Michael Hoel. 1992. *Bargaining structure and economic performance*. Oslo University Department of Economics.
- Müller, Torsten and Thorsten Schulten. 2019. "Germany: parallel universes of collective bargaining." *Collective bargaining in Europe: towards an endgame* :239.
- Oberfichtner, Michael and Claus Schnabel. 2018. "The German Model of Industrial Relations: (Where) Does It Still Exist?" *Jahrbücher für Nationalökonomie und Statistik* 239 (1):5–37.
- Ochel, Wolfgang. 2005. "Decentralising Wage Bargaining in Germany—A Way to Increase Employment?" *CESifo Working Paper* .
- OECD. 2019. "Negotiating Our Way Up: Collective Bargaining in a Changing World of Work." 'https://www.oecd-ilibrary.org/employment/negotiating-our-way-up_1fd2da34-en;jsessionid=yH7TXrmEztl1qQSRy5GIpUjU.ip-10-240-5-158' accessed April-04-2022.
- . 2022a. "Average wages (indicator)." 'https://doi.org/10.1787/cc3e1387-en' accessed April-04-2022.
- . 2022b. "Employee compensation by activity (indicator)." 'https://doi.org/10.1787/7af78603-en' accessed April-04-2022.
- . 2022c. "GDP per hour worked (indicator)." 'https://doi.org/10.1787/1439e590-en' accessed April-04-2022.
- . 2022d. "Hours worked (indicator)." 'https://doi.org/10.1787/47be1c78-en' accessed April-04-2022.
- . 2022e. "Labour force participation rate (indicator)." 'https://doi.org/10.1787/8a801325-en' accessed April-04-2022.

- . 2022f. “Unemployment rate (indicator).” ‘<https://doi.org/10.1787/52570002-en>’ accessed April-04-2022.
- . 2022g. “Value added by activity (indicator).” ‘<https://doi.org/10.1787/a8b2bd2b-en>’ accessed April-04-2022.
- . 2022h. “Wage levels (indicator).” ‘<https://doi.org/10.1787/0a1c27bc-en>’ accessed April-04-2022.
- Paster, Thomas. 2012. “Do German Employers Support Board-Level Codetermination? The Paradox of Individual Support and Collective Opposition.” *Socio-Economic Review* 10 (3):471–495.
- Price, Brendan. 2018. “The Duration and Wage Effects of Long-term Unemployment Benefits: Evidence from Germany’s Hartz IV Reform.” *Working Paper*.
- Raess, Damian. 2014. “Export Dependence and Institutional Change in Wage Bargaining in Germany.” *International Studies Quarterly* 58 (2):282–294.
- Rehder, Britta. 2003. *Betriebliche Bündnisse für Arbeit in Deutschland: Mitbestimmung und Flächentarif im Wandel*. Campus Verlag.
- Schnabel, Claus. 2020. “Betriebliche Mitbestimmung in Deutschland: Verbreitung, Auswirkungen und Implikationen (Translation: “Workplace participation in Germany: distribution, effects and implications”).” *Perspektiven der Wirtschaftspolitik* 21 (4).
- Schulten, Thorsten, Götz Bauer, Marion Frömming, Rosemarie Pulfrich, Andrea Taube, Monika Wollensack, and Jasmina Ziouziou. 2021. *2021 Tarifpolitik - Statistisches Taschenbuch*.
- Schulten, Thorsten and Reinhard Bispinck. 2018. *Multi-Employer Bargaining Under Pressure: Decentralisation Trends in Five European Countries*, chap. Varieties of Decentralisation in German Collective Bargaining. European Trade Union Institute.
- Seifert, Hartmut and Heiko Massa-Wirth. 2005. “Pacts for Employment and Competitiveness in Germany.” *Industrial Relations Journal* 36 (3):217–240.
- Silvia, Stephen. 1997. “German Unification and Emerging Divisions within German Employers’ Associations: Cause or Catalyst?” *Comparative Politics* 29 (2):187–208.
- . 2013. *Holding the Shop Together: German Industrial Relations in the Postwar Era*. Cornell University Press.
- Silvia, Stephen J and Wolfgang Schroeder. 2007. “Why are German Employers Associations Declining? Arguments and Evidence.” *Comparative Political Studies* 40 (12):1433–1459.

- SPD. 2017. "Zeit für mehr Gerechtigkeit: Unser Regierungsprogramm für Deutschland." 'http://library.fes.de/pdf-files/bibliothek/downl/zeit_fuer_mehr_gerechtigkeit-unser_regierungsprogramm.pdf' accessed March-02-2022.
- . 2021. "The SPD's Programme for the Future." 'https://www.spd.de/fileadmin/Dokumente/Regierungsprogramm/202105_Zukunftsprogramm_EN.pdf' accessed March-02-2022.
- Stansbury, Anna and Lawrence Summers. 2020. "The Declining Worker Power Hypothesis: An Explanation for the Recent Evolution of the American Economy." *NBER Working Paper* .
- Stettes, Oliver. 2007. "Die Arbeitnehmermitbestimmung im Aufsichtsrat: Ergebnisse einer Unternehmensbefragung." *IW-Trends-Vierteljahresschrift zur empirischen Wirtschaftsforschung* 34 (1):17–30.
- Strine Jr., Leo, Aneil Kovvali, and Oluwatomi Williams. 2021. "Lifting Labor's Voice: A Principled Path Toward Greater Worker Voice And Power Within American Corporate Governance." *Faculty Scholarship at Penn Law* .
- The Economist. 2017. "The Good and Bad in Germany's Economic Model Are Strongly Linked." 'https://www.economist.com/briefing/2017/07/08/the-good-and-bad-in-germanys-economic-model-are-strongly-linked' accessed April-04-2022.
- . 2020. "Most of the World Has Yet to Embrace Codetermination." 'https://www.economist.com/business/2020/02/01/most-of-the-world-has-yet-to-embrace-co-determination' accessed April-04-2022.
- Thelen, Kathleen Ann. 1991. *Union of Parts: Labor Politics in Postwar Germany*. Cornell University Press.
- . 2014. *Varieties of Liberalization and the New Politics of Social Solidarity*. Cambridge University Press.
- Visser, Jelle. 2021. "OECD/AIAS ICTWSS Database: Detailed Note on Definitions, Measurement, and Sources." *OECD* .
- Vox. 2019a. "The Boldest and Weakest Labor Platforms of the 2020 Democratic Primary." 'https://www.vox.com/2019/9/5/20847614/democratic-debate-candidate-labor-platforms' accessed April-04-2022.
- . 2019b. ""Unions for All": The New Plan to Save the American Labor Movement." 'https://www.vox.com/policy-and-politics/2019/9/2/20838782/unions-for-all-seiu-sectoral-bargaining-labor-unions' accessed April-04-2022.

- Wang, Sean and Samuel Young. 2022. "Unionization, Employer Opposition, and Establishment Closure." *MIT Working Paper* .
- Weil, David. 2014. *The Fissured Workplace*. Harvard University Press.
- Western, Bruce and Jake Rosenfeld. 2011. "Unions, Norms, and the Rise in US Wage Inequality." *American Sociological Review* 76 (4):513–537.
- Winkler, Heinrich August. 1998. *Weimar 1918-1933: Die Geschichte der ersten deutschen Demokratie*. C.H. Beck.
- Wochenblatt-Online. 2020. "RAFI und IG Metall einigen sich auf neuen Anerkennungstarifvertrag (ATV)." '<https://wochenblatt-online.de/rafi-und-ig-metall-einigen-sich-auf-neuen-anerkennungstarifvertrag-atv/>' accessed March-02-2022.