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Wage bargaining or wage posting? Evidence from the employers' side ☆

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HIGHLIGHTS

- We show that wage bargaining and wage posting coexist in the German labor market.
- More than one-third of hirings are characterized by individual wage bargaining.
- Bargaining is more likely for more-educated applicants and in tight labor markets.
- Posting dominates in the public sector and in firms with collective agreements.
- Employers are less likely to negotiate with applicants from non-employment.

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ABSTRACT

Using a representative establishment dataset, this paper is the first to analyze the incidence of wage bargaining and wage posting in the matching process from the employers' side. We show that both modes of wage determination coexist in the German labor market, with more than one-third of hirings being characterized by individual wage negotiations. Wage bargaining is more likely for more-educated applicants, for jobs with special requirements, and in tight regional labor markets. Wage posting (in the sense of a fixed offer) dominates in the public sector, in larger firms, in firms covered by collective bargaining agreements, and in jobs involving part-time and fixed-term contracts. Job seekers who are unemployed, out of the labor force or have just finished an apprenticeship are also less likely to have a chance to negotiate.

1. Introduction

In labor markets with search and matching frictions, workers and employers must invest in a lengthy and costly search process in quest of productive matches. Frictions generate match-specific rents and job surpluses. Wage determination defines a firm and its worker's shares in a job's surplus and is thus a key ingredient of job search models of the labor market. The search literature has typically considered two mechanisms of wage setting: wage posting and wage bargaining.[1] Wage posting involves an employer who defines a job in terms of duties and skills and unilaterally sets the wage ex ante, i.e., before he meets job

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[1] Detailed discussions of these and other mechanisms are provided, e.g., by Mortensen and Pissarides (1999), Hall and Krueger (2010), and Manning (2011). For theoretical models that explicitly incorporate employers' choice between wage posting and bargaining, see, e.g., Ellingsen and Rosén (2003) and Michelacci and Suarez (2006). Wage posting is typically assumed in microeconomic analyses along the lines of Burdett and Mortensen (1998), whereas wage bargaining models are most often used in macroeconomic applications (see the survey by Rogerson and Shimer, 2011).

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seekers, and workers search for the best job available. Suitable andidates are offered the job and the corresponding wage as a take-it-or-leave-it proposition, and the employer is committed not to respond to any counteroffer from a job seeker. In contrast, in wage bargaining models the employer makes an initial offer but job seekers can make a counteroffer for a higher wage, and alternating-offer bargaining may best describe the ensuing process.

One major advantage of wage posting is that employers can optimize the tradeoff between committing to higher wages and more easily attracting job applicants. However, with worker heterogeneity, wage posting may preclude fruitful matches with potential candidates whose reservation wages are above the posted wage but whose productivity is even higher. By not matching with such candidates, employers forego some potential surplus. In contrast, no opportunity for a profitable match is foregone under wage bargaining because rent sharing ensures that any job–worker contact that yields a positive surplus leads to a new job. Therefore, wage bargaining may be preferred when the productivity of prospective applicants is highly dispersed (Ellingsen and Rosén, 2003; Michelacci and Suarez, 2006).

In this paper, we empirically analyze these two modes of wage setting, focusing on the incidence and determinants of individual wage bargaining. Although distinguishing between both models of wage setting theoretically and empirically may be not as easy as suggested by the brief comparison above,[2] it is interesting to know which type of wage setting is actually used by the majority of firms or by certain types of firms. From a theoretical point of view, this is important because the equilibrium properties of the two modes of wage setting are different in terms of pure wage dispersion, with wage posting resulting in wage differentials that are not associated with observed worker skill (see Burdett and Mortensen, 1998; Mortensen and Pissarides, 1999). Second, if wage posting is found to prevail in the market, then several labor market questions (such as the structure of wages) can be addressed through the simple static textbook model of monopsony, because wage posting models can be considered to be models of monopsonistic competition. Conversely, no such simplification is at hand when assuming ex post wage bargaining within a matching framework (Manning, 2003, 16). Third, empirical evidence about the modes of wage setting may have consequences for the so-called Shimer (2005) puzzle, that fluctuations in the unemployment rate seem to be much larger than predicted by the standard labor market matching model. One potential mechanism for amplifying the effect of shocks on the labor market is wage rigidity. Whether wages are negotiated or posted plays a role in wage rigidity in some models, such as that of Ellingsen and Rosén (2003), in which posted wages react more than bargained wages to an increase in the reservation wage resulting from a shock. Because bargained wages are more rigid, employment and unemployment show a stronger reaction to shocks. In contrast, if wage posting is more common, the observed excess volatility of unemployment over the business cycle cannot be a result of sticky wages. Hall and Krueger (2010, 15) thus argue that “a finding that a substantial majority of jobs were filled at posted wages would be unfavorable for an important branch of modern thinking about unemployment volatility.”

Despite the importance of these wage setting models and their contrasting implications, evidence on the prevalence of wage posting and wage bargaining is very limited. Hall and Krueger (2010, 2012) have surveyed a representative sample of approximately 1300 workers in the US and asked about the wage determination process at the time that those workers were hired into their current or most recent jobs. Hall and Krueger find that both forms of wage setting are common in the US labor market. Approximately one-third of matches are based on wage bargaining and almost two-thirds are based on wage posting. Although wage bargaining is the dominant model for more-educated workers, wage posting is more common for public employment, unionized jobs, and part-time workers. Examining wage posting in job ads in the US, the UK, and Slovenia, Brenčič (2012) detects considerable differences in the incidence of wage posting across the three labor markets, with information about a (non-negotiable) wage offer being most prevalent in job ads in the UK. In all three labor markets, employers are less likely to post a wage offer when searching for a skilled worker.

Against this backdrop, our paper contributes to the literature in two ways. First, by using a large and representative data set from Germany, we present evidence for an institutional framework of a welfare state with a relatively high incidence of collective bargaining that is quite different from the institutional settings of countries included in previous studies. Interestingly, despite these institutional differences, our results are broadly in line with those of Hall and Krueger's (2012) US study in that wage posting and wage bargaining are found to coexist in the labor market, with approximately the same share of workers bargaining individually for their wages. Our analysis also confirms that the incidence of individual wage bargaining rises with job-seekers' education, whereas it is relatively low for part-time workers, in the public sector, and in cases where there exists some form of collective bargaining, but in contrast to Hall and Krueger (2012) a gender gap in wage bargaining is not clearly visible in our data. Second, whereas Hall and Krueger's study (2012) is based on information from the workers' side, our extensive survey of more than 9000 establishments enables us to provide novel evidence from the employers' side and to investigate the role of firm characteristics and outside factors. We show that the incidence of individual wage bargaining is related to establishment size, the collective bargaining status of the establishment, the type of job opening, and the state of the regional labor market.

2. Data and potential determinants

For our analysis, we used the German Job Vacancy Survey (for a detailed description, see Kettner and Vogler-Ludwig, 2010). This survey started in 1989 and is conducted annually by the Institute for Employment Research (IAB). The sample is randomly drawn from the universe of establishments with at least one employee and is stratified by 23 economic sectors and 7 firm size classes. The survey includes information about, among other subjects, the number of vacancies, worker flows, and various firm characteristics. It also contains a number of questions concerning the most recent case of a successfully recruited worker,[3] such as gender, age, and the worker's previous status, the qualification required for the job, the duration of the search, and the recruiting channels used by the employer. In the 2011 wave of this survey, we included an additional question that asked establishments whether bargaining about remuneration took place in the last case of successful hiring. To be more specific, our question of interest is: “Did you negotiate with the applicant about remuneration (basic salary and further components if applicable)?” Overall, 9260 firms answered this specific question (533 cases are missing, but detailed comparisons of responding and non-responding firms did not suggest that these missing cases are not random). Respondents had three choices of answers: “Yes”, “No, fixed offer made by the establishment”, or “No, for other reasons …”.[4] Below, we only use the yes/no distinction and analyze the incidence of wage negotiations.

[2] Note that although search and matching can be assumed to be random (and usually are in wage bargaining models), models of “directed search” (e.g., Moen, 1997; Michelacci and Suarez, 2006) typically assume wage posting. Here, job seekers observe the posted wages of all employers before they decide where to apply, and then pick the best offer available. Distinguishing between both types of wage setting is also difficult in some models of on-the-job search such as Cahuc et al. (2006), which combine on-the-job search and Nash bargaining.

[3] The questionnaire explicitly refers to the most recent hire, which excludes internal promotions.

[4] Note that the last item “No, for other reasons” (chosen in 223 cases) offers an open answer. We thoroughly analyzed these open answers, and when they meant essentially the same thing as a fixed offer (for instance, by referring to a collectively agreed wage or piece rate) we recoded it to “No, fixed offer made by the establishment”. This happened in 213 cases. The other ten cases were defined as missing.