

DISCUSSION PAPER SERIES

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ABSTRACT

Can Wage Transparency Alleviate Gender Sorting in the Labor Market?

Wage decompositions suggest that a large share of the gender wage gap can be explained by differences in occupation and employer choices. If female workers are not well informed about these pay differences, increasing wage transparency might alleviate the gender gap. We test this hypothesis by examining the impact of the 2011 Pay Transparency Law in Austria, which requires companies to state a wage figure in job advertisements. For the analysis, we combine vacancy postings from the largest Austrian job board with social security spells that record the gender of new hires. To compare the pay level of vacancies before and after the reform, we predict wage postings using detailed occupation-employer cells, which explain about 75 percent of the variation in posted wages. While we estimate a substantial gender wage gap of 15 log points, pay transparency did not affect gender sorting into better-paid occupation and firms. To study job transitions, we focus on a subsample of workers whose previous employment is also observed. Our estimates show that switching occupations is common, and it often entails significant wage changes. Yet, in line with our main estimates, we do not find that women become more likely to switch to better-paid jobs. We interpret the absence of effects as evidence that limited transparency does not explain the persistence of gender sorting in the labor market.

JEL Classification: J16, J31, J62, J63, J68

Keywords: gender differences, wage postings, pay transparency, job vacancies, labor market sorting

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1 Introduction

The gender pay gap has gradually narrowed over the last decades.¹ Yet, gender differences in occupation, industry, and firms remain important determinants of the remaining gap. Blau and Kahn (2017) find that occupation and industry now constitute the largest factors accounting for the gender pay gap in the US labor market. Several recent studies confirm that differential sorting between men and women into high-paying firms is a major contributor to the gender pay gap in various countries (Card et al., 2016; Casarico and Lattanzio, 2019; Morchio and Moser, 2021; Gulyas et al., 2021).

Meanwhile, there is an ongoing debate among academics and policymakers about the best policy instruments to close this gap. Wage transparency has recently been advocated as a potential solution to narrow existing differences, and many European countries have introduced different variants of pay transparency legislation.² If workers are not fully aware of the potential monetary gains from switching to different jobs, increased transparency can help close the gender pay gap.

To test this hypothesis, our paper examines the impact of a recent transparency law in Austria that requires firms to indicate a lower bound for wages in job postings, which should be at least the collective bargaining wage of the advertised job. Specifically, we analyze whether wage transparency affects gender sorting by increasing the share of women in better-paid jobs. Most existing transparency guidelines require firms to reveal pay differences among their employees, but these internal reports are usually available only to company employees. Instead, wages in vacancy postings allow jobseeker to compare wages of different jobs easily.

Our empirical analysis is based on vacancy postings administered by the Austrian public employment service AMS, which hosts the largest job board in Austria. To classify vacancies by their prospective pay, we predict wages at the firm- and occupation-level using wage postings in the post-reform years.³ We then combine vacancy data with social security records, which report the gender of the workers filling these vacancies.

While we estimate a large gender wage gap driven by firm and occupation differences, our analysis shows that wage transparency in job postings cannot reduce this gap. None of our estimates finds that gender sorting changed significantly because of the reform.

Can the estimated null effect be explained by the lack of mobility across occupations

¹See Blau and Kahn (1997, 2000, 2006).

²In March 2021, the European Commission additionally proposed a directive to strengthen the application of the principle of equal pay for equal work through pay transparency.

³A recent paper on gender discrimination by Card et al. (2021) uses a similar procedure to predict gender preferences in Austria.

and firms? To study mobility patterns, we focus on a subsample of workers whose previous jobs are also observed. Our estimates show that occupational switching is common, often entailing significant wage changes. The standard deviation of the difference between the log posted wage in the current and previous job is about 0.16, suggesting that switching to better- or worse-paid jobs is possible. Nonetheless, we do not find evidence that wage transparency changes these patterns.

Our findings contribute to the large literature on gender pay gaps. Previous studies propose various reasons why women earn lower wages than men, including behavioral differences in risk aversion, wage bargaining, desire to compete, explanations related to fertility, and non-pecuniary job preferences.⁴ Empirical evidence on the effectiveness of pay transparency is mixed. Most studies examine laws that enable workers to acquire information (aggregated by gender) on their employer’s pay structure. This information might reveal unjustified wage gaps and thus increase the bargaining power of lower-paid workers. Baker et al. (2019) show that salary disclosure among university employees in Canada substantially reduced the gender pay gap. Various other European studies examine the impact of transparency laws in Denmark (Bennedsen et al., 2019), the UK (Duchini et al., 2020; Blundell, 2020) and Germany (Seitz and Sinha, 2022) but they find at most a modest reduction in gender differences.

Three recent studies that focus on transparency laws in Austria are closely related to our work. Gulyas et al. (2021) and Böheim and Gust (2021) find that mandatory income reports of firms do not affect the earnings of female and male workers. Frimmel et al. (2022) examine to what extent wage posting affects the bargaining options of workers. Using data on earnings, they show that wage transparency reduces gender differences for vacancies that need to be filled urgently. The study concludes that increased transparency lowers the options to pay women and men differently for the same job. While they find that bargaining options for a given job change, our study shows that transparency did not affect gender sorting into better-paid jobs.

The absence of any effects suggests that other non-pecuniary preferences are more relevant in explaining labor market outcomes. Even if increased wage transparency reveals unknown pay differences, potential wage gains may often be too small to justify job switches. Another explanation might be that gender discrimination limits women’s mobility into higher-paid jobs.

⁴See Blau and Kahn (2017) for a recent survey of the literature.

2 Setting and data

2.1 Theoretical predictions

Starting from March 2011, the Austrian Equal Treatment Law requires that job advertisements state the minimum wage employers are willing to pay. The posted wage must at least correspond to the collective bargaining agreement that applies to the vacancy. Non-compliance by employers can lead to monetary sanctions.⁵

To study the theoretical implications of increased wage transparency, we formulate a stylized model of job choices. For simplicity, the labor market is characterized by two types of job searchers j , females (F) and males (M), and two types of jobs k , high-wage (H) and low-wage (L). The wage gap is thus $\Delta w = w_H - w_L > 0$.

Jobseekers derive utility from wages but might also value other job characteristics. Non-pecuniary motives determining these preferences might be the prior accumulation of job-specific skills or other benefits such as flexibility or location. Goldin (2014) documents that women are more likely to work in occupations offering higher flexibility but lower pay. In our model, workers who accept a low-paid job receive non-pecuniary utility $v_i \in \mathbb{R}$, which is drawn from distribution $G_j(v_i)$. For high-paid jobs, v_i is normalized to zero. We assume that women have stronger non-pecuniary preferences, modeled as first-order stochastic dominance of the gender-specific non-pecuniary utility distributions, i.e. $G_M(v_i) \geq G_F(v_i)$ for any v_i .

Jobseekers maximize total utility, given by the sum of the two components: $U_i = v_i + w_k$. Without wage transparency, pay differences between the two job types are unknown, implying that job seekers choose the lower-paid job if $v_i \geq 0$. For simplicity, we assume that everybody can find a job of the desired type and that their choices do not affect wage levels. The gender wage gap is then given by

$$[Pr(v_i \geq 0 | j = F) - Pr(v_i \geq 0 | j = M)] \times \Delta w \quad (1)$$

If transparency reveals wage differences, this will affect women's choices to a larger extent. As a result, the gap reduces by

$$[Pr(\Delta w \geq v_i \geq 0 | j = F) - Pr(\Delta w \geq v_i \geq 0 | j = M)] \times \Delta w. \quad (2)$$

To illustrate these changes, Figure 1 depicts an example scenario, where the grey

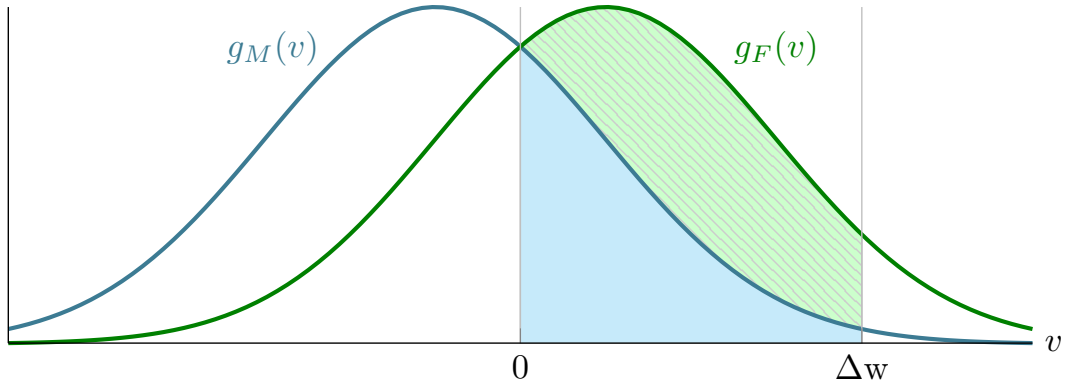
⁵Another article of the law also requires firms to release income reports to their employees. This requirement was rolled out between 2011 and 2014, starting with large firms. Gulyas et al. (2021) and Böheim and Gust (2021) conclude that the reports had no impact on wages.

shaded area corresponds to the differential increase in female jobseekers that switch types under wage transparency. The wage motive becomes more relevant, and gender sorting into worse- and better-paid jobs declines. A larger wage gap between job types will yield more significant changes in the gender wage gap in absolute and relative terms. If the demand side cannot fully adjust to changing type-specific supply of workers or if wage levels respond to these changes, effects on the gender wage gap will be less pronounced.

The crucial assumption is that women value the non-pecuniary component of jobs more than men. According to previous studies, female and male workers value job characteristics like flexibility or workplace location differently (Redmond and McGuinness, 2020; Le Barbanchon et al., 2021). In our model, these differences generate the gender pay gap without transparency and imply that some gap remains even with complete information.

Besides preferences, discriminatory behavior of employers, who favor male applicants for jobs with higher pay, can also contribute to gender differences. Card et al. (2021) provide evidence that gender preferences are common among employers in Austria even though explicit references cannot be made anymore in job advertisements. Yet, it is unlikely that the gender wage gap is entirely driven by discriminating employers.

Figure 1: Impact of wage transparency on job choice



2.2 Data source

Our analysis focuses on vacancy postings administered by the public employment office in Austria (AMS), which can be linked to Austrian social security data (ASSD).

The AMS job board offers the largest pool of vacancies in Austria. Firm surveys conducted by Statistics Austria show that the job postings cover about 50 to 60 percent of

all vacancies in recent years.⁶ Another advantage over other sources of job advertisements is that AMS caseworkers actively manage the job board and make sure that inactive vacancies are removed. Importantly, they also remind recruiters to provide the required wage postings.

The job ads are accessible to job seekers through the AMS online job board. Unemployed workers registered at AMS can receive additional job search support and might be directly referred to suitable vacancies by caseworkers.

Our source data cover all vacancies for regular, permanent employment posted between 2002 and 2020. The database records several job characteristics such as employer information, occupation, extent of work, required education, and, since March 2011, offered wages. Occupations are classified using a detailed 6-digit scheme.⁷ If a vacancy is filled under the mediation of AMS caseworkers ($\approx 20\%$ of vacancies), we can also link the data to social security records of hired workers. These data cover all employment relations subject to social security contributions in Austria and provide information on the gender of workers (see Zweimüller et al. (2009) for more details).

3 Empirical analysis

3.1 Wage postings and job mobility

Due to the transparency law, wage postings can be observed for vacancies listed after February 2011. To also gauge the wage level of jobs before the reform, we use detailed information on firms and occupations to predict wage postings. Specifically, we estimate the leave-out mean of log posted wages for every occupation-firm cell based on wage postings between March 2011 and December 2020. All wages are adjusted to 2020 Euros to account for inflation. Moreover, we only use postings of full-time vacancies because part-time wages might not always be reported as full-time equivalent.

In total, we can estimate leave-out means for about 150,000 occupation-firm cells. A comparison between predicted and actual wage postings listed after the reform allows to evaluate their predictive power. To assess the contribution of occupations and firms separately, we also calculate predictions solely based on either occupation or firm cells. Columns 1 and 2 of Table 1 show that both strata alone already yield an R-squared of about 60 percent. Using occupation-firm cells increases the explained variation in log posted wages to 75 percent. This shows that the leave-out means can be used to classify

⁶Annual figures can be found on the website of Statistics Austria ([External link](#)).

⁷The corresponding dictionary of occupations is available at <https://www.ams.at/bis> (in German).

jobs by prospective pay with high precision even when wage postings are not observed.

To study the impact of increased wage transparency, we focus on job ads from 2009 to 2012. Moreover, we need to make two sample restrictions. First, we can only examine vacancies if a wage prediction exists. This excludes smaller firms with very few listings and rare occupations for which no other wage postings are observed in the relevant cell. Second, we restrict the sample to vacancies mediated by the public employment service because the gender of eventual hires can be retrieved from linked social security records. Some vacancies are filled by multiple hires. For these observations, we assign the share of female hires.

Table 1: Prediction accuracy

	Outcome: log(posted wage)		
	Occupation	Firm	Occupation x Firm
R-squared	0.615	0.585	0.753
RMSE	0.149	0.154	0.119
No. of groups	2,461	56,125	149,699

Note: The estimation sample includes all vacancies with occupation-firm-level predictions ($N = 560,347$).

In the subsequent analysis, we will also examine workers who were hired multiple times under AMS mediation. This subsample allows us to study differences to prior employment. Specifically, we can quantify to what extent job seekers switch to differently paid jobs and how this changes if wage transparency increases.

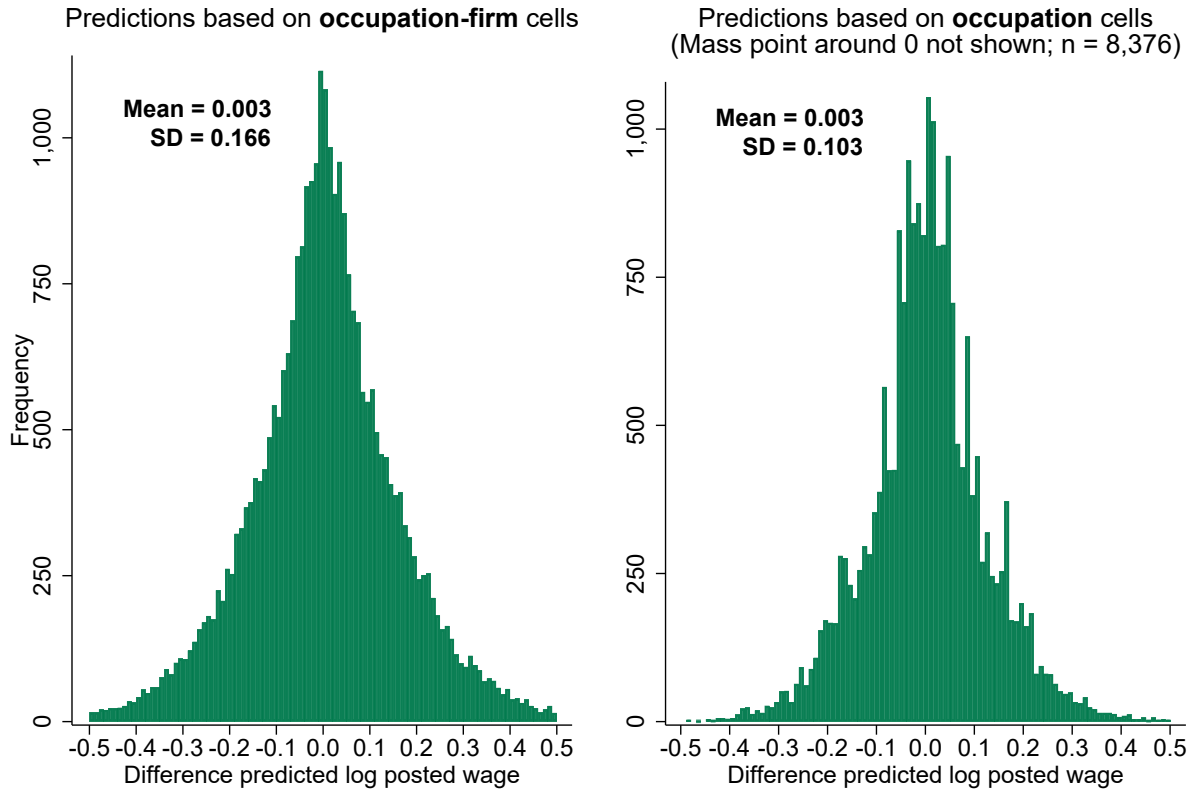
Due to the sample restrictions, the composition of our estimation sample differs somewhat from the universe of vacancies. Table A.1 of the appendix provides summary statistics on a set of vacancy characteristics for the different samples. The first column is based on the entire sample of vacancies posted between 2009 and 2012, while the second column reports statistics for vacancies with wage predictions. As expected, medium-sized and large firms are moderately overrepresented when vacancies without posted-wage predictions are removed. Similarly, part-time jobs are less likely to have a wage prediction (of the full-time equivalent) in the respective occupation-firm cell.

For 122,000 job listings (or 22 percent of the remaining sample), we additionally observe the gender of hires because these vacancies were filled by the public employment service. Column 3 of Table A.1 shows that mediated vacancies tend to require lower education levels than the full sample, while other characteristics remain comparable. About a quarter of these vacancies were filled by workers who had already accepted a mediated job in the past. Compared to the average hired worker, a larger share of

repeated hires are men, and they are more often hired for jobs requiring little education (column 4).

We next use the sample of repeated hires to quantify wage changes due to a job transition. If the transparency law is effective, one should observe changes in women's wage growth. For each observation, we calculate the difference in predicted log posted wages between the respective vacancy and the vacancy that the same worker previously filled. The first histogram of Figure 2 shows the distribution of changes when predictions are calculated based on leave-out means of every occupation-firm cell. While mean and median wage changes are close to zero, we observe considerable variation between vacancies. Some of the hired workers previously worked in jobs that offered markedly higher or lower pay.

Figure 2: Job-to-job changes in predicted wages



Note: The estimation sample includes all vacancies filled by workers who were already hired via AMS before ($N = 29,944$).

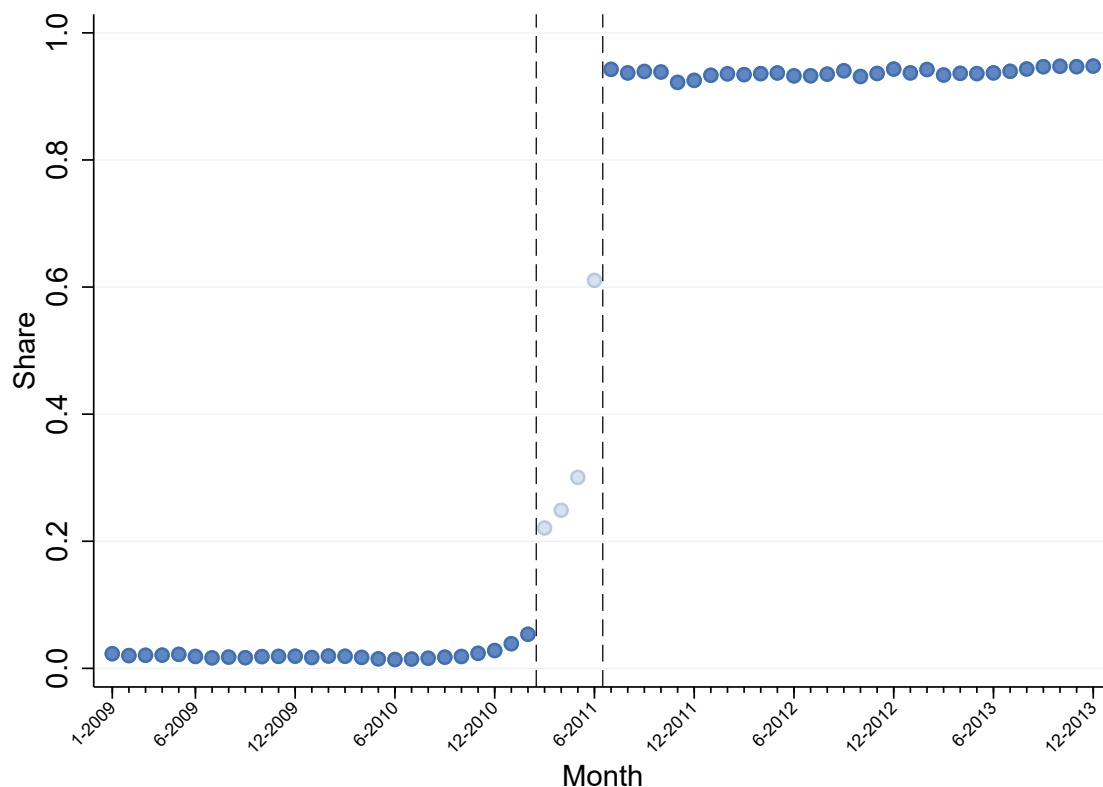
The observed wage changes can result from both firm and occupation switches. To distinguish both channels, we also compute differences when posted wages are predicted using occupation-level means only. As shown by the second histogram of Figure 2, occupation switches explain most of the dispersion in wage changes, albeit the overall variance

is by default smaller. This shows that workers change not only employers but also occupations, which often results in better or worse wages. The overall high level of wage mobility supports the notion that wage transparency could indeed have an impact on job choices.

3.2 Impact of wage transparency

This section provides estimates on the impact of the transparency reform, which was enacted in March 2011. To show that employers complied with the new law, we plot the share of job ads with wage posting by month of listing in Figure 3. In the pre-reform period, very few employers report prospective pay to the job board. Afterward, there exists a transition period of four months in which the share of wage listings consecutively increases. From July 2011 onwards, the job board enforces the new requirement, and the share remains at around 95 percent throughout our period of observation.

Figure 3: Job ads with wage posting



In the remainder of this section, we will use the firm- and occupation-specific predictions of posted wages as a measure of prospective pay. We begin our analysis by illustrating how the raw gender gap in posted wages changes over time. Figure 4a plots the share of females, corrected for seasonal variation, in each wage quartile. It shows that

women are much less likely to fill higher-paid vacancies. While employers hire women for approximately 70 percent of vacancies in the bottom quartile of the wage distribution, less than 20 percent of vacancies in the top quartile are filled by female workers. These shares remain constant between 2009 and 2013 and do not change when the transparency law is enacted in 2011.

To gauge the evolution of gender differences by means of a uniform measure, we next regress log posted wages on the female share in every month. As shown in Figure 4b, the gender pay gap remains constant at around 15 log points throughout the period of observation. This is similar in magnitude to the overall wage gap in Austria (see Böheim et al., 2021). The absence of changes since 2011 shows that the transparency reform has had no measurable impact on gender sorting into better-paid jobs.

It should be noted again that the estimated pay gap is based on predicted wage postings. Because occupations and firms cannot fully explain the variation in posted wages, gender differences in predicted wages will likely be smaller than gender differences in actual wage postings. This distinction is also relevant for the analysis of transparency effects because a strongly attenuated wage measure would make it more difficult to identify small effects. When we compare actual posted wages (after the reform), the gender gap amounts to approximately 15.8 log points. The underlying downward bias is thus very moderate and can only induce little attenuation of the transparency-effect estimates.

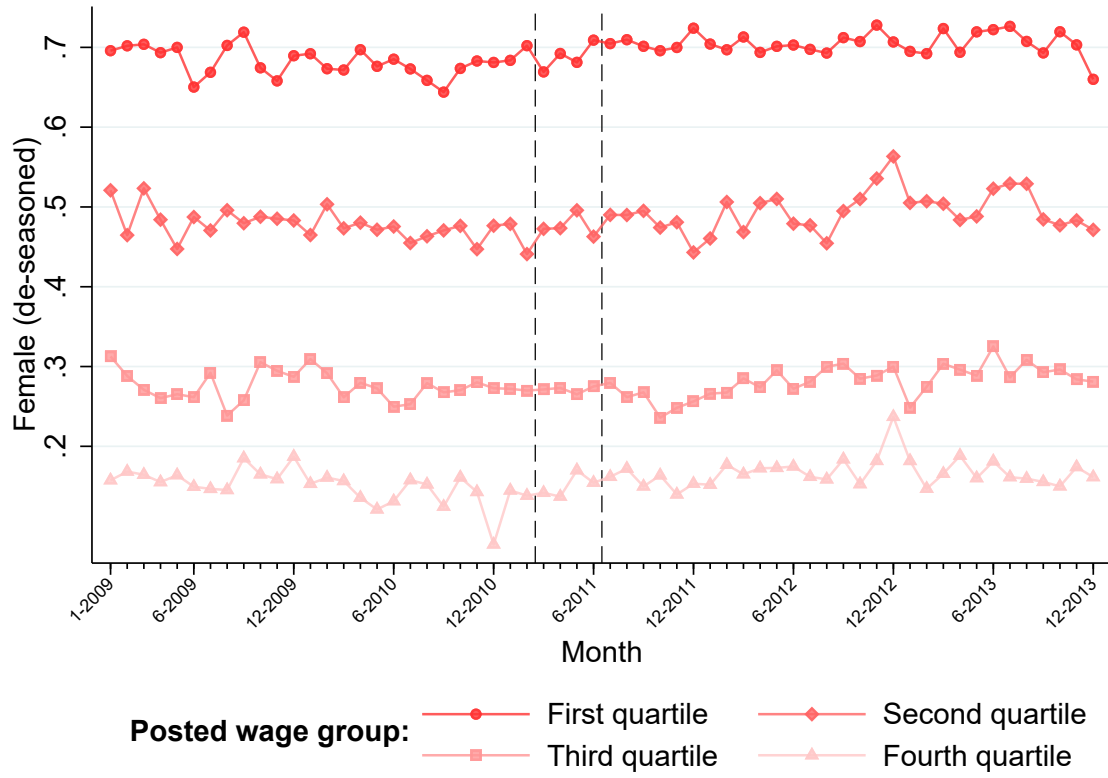
Figure 4b does not reveal any impact around the introduction of the law, but month-to-month differences in the wage gap might disguise more minor structural changes. To obtain an estimate for the reform effect, we propose the following regression model:

$$\log(w_{it}) = \alpha \text{female}_i + \beta \text{post}_t + \gamma \text{post}_t \times \text{female}_i + \mu_t + f(t) + \varepsilon_{it}, \quad (3)$$

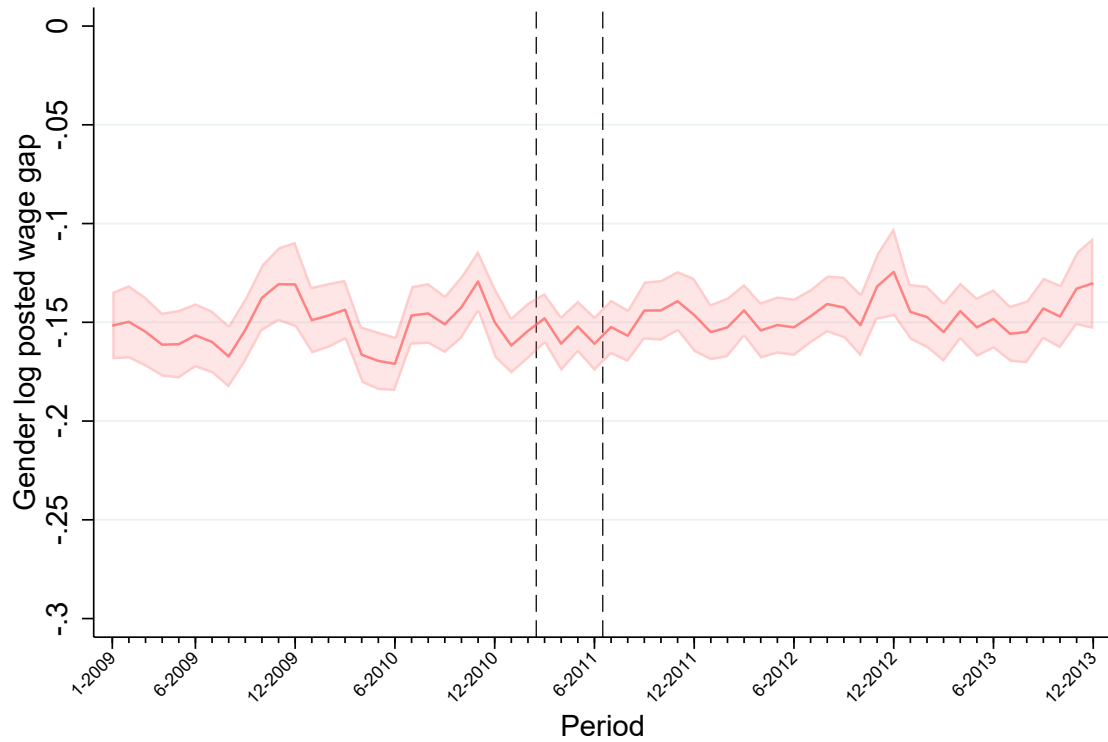
where $\log(w_{it})$ is the predicted log posted wage of vacancy i listed in month t and female_i denotes the share of females hired for this vacancy; the treatment variable post_t indicates whether the job was posted after February 2011 (post period). To capture seasonality and time trends, we include calendar month indicators μ_t and a time-trend polynomial $f(t)$, where month t is normalized to be zero in March 2011. ε_{it} refers to the error term.

Our parameter of interest is γ , which captures transparency effects on the gender gap in posted wages of new hires. A positive coefficient would indicate that women fill better-paid jobs more often than men because of higher transparency. To identify this parameter correctly, the polynomial term should adequately capture unrelated time trends.

Figure 4: Gender gaps in posted wages by month of posting



(a) Female share by posted-wage quartile



Note: Standard errors are clustered at the occupation-firm level.

(b) Log wage difference between women and men

As shown in Figure 4a, trends in the gender gap appear to be absent anyhow. The coefficient on the female share then captures the gender gap in the absence of wage transparency.

Estimates of equation 3 are reported for different polynomials $f(t)$ in the first three columns of Table 2 - Panel A. As expected, the coefficients are largely unaffected by the choice of time trend. All specifications show that vacancies filled by women post about 15 log points lower wages than those filled by men and this did not change with the transparency initiative. Estimates of γ are always close to zero and only in the first specification marginally significant.

The observed wage gap might be explained by occupation and firm differences between female and male workers. To distinguish both channels, we estimate additional specifications with occupation and firm indicators and inspect how estimates for the (pre-reform) gender gap and the transparency effect change. The remaining columns of Panel A show that most of the pay gap is driven by wage differences between occupations. Women are mainly paid less than men because they work in lower-paid occupations and, only to a lesser extent, because they work at lower-paying firms. When we account for occupation fixed-effects, the coefficient on the female share substantially decreases to 1.5 log points. Including firm indicators instead only reduces the estimate to 5 log points. Our results suggest, however, that the lack of pay transparency is not the root cause of these differences.

If wage transparency should alleviate gender differences, workers must be able to switch to higher-paying occupations and firms. As shown in the previous section, switches to better- or worse-paid jobs are quite common in the sample of repeated hires. For comparison, we re-estimate equation 3 using only vacancies filled by repeated hires and report the coefficients in the first three columns of Table 2 - Panel B. While the estimated gender gap is slightly larger here, transparency effects are likewise absent.

The sample of repeated hires also allows us to study the impact of wage transparency on worker-specific wage growth. Here, wage changes are captured by the difference in predicted log posted wages between the filled vacancy and the vacancy for which the same worker was hired previously. If the reform had the desired effect, women's wage growth would be relatively stronger. As reported in the remaining columns of Panel B, our estimates contradict this prediction. After a job transition, wage changes are very similar between men and women, both before and after the transparency reform.

A key factor limiting worker mobility in the short run are education requirements and job-specific training demands. It is likely easier to switch to jobs that require little or

no further education. To test whether transparency effects differ by level of education, we distinguish between vacancies that require at most compulsory schooling, vocational training, and higher education. Table A.2 of the appendix shows that gender differences in posted wages are lower for jobs requiring only basic education, but the coefficient still amounts to about 11 log points. We do not estimate significant effects of the transparency law in any of the three groups.

Table 2: Impact of wage transparency

Panel A: All hires

	Predicted log(posted wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
Post \times Female	0.005* (0.003)	-0.002 (0.005)	-0.002 (0.007)	-0.004 (0.004)	-0.001 (0.003)	-0.003 (0.002)
Female	-0.153*** (0.002)	-0.150*** (0.004)	-0.152*** (0.006)	-0.015*** (0.003)	-0.052*** (0.002)	-0.006** (0.002)
Post	0.003 (0.002)	-0.007** (0.003)	-0.002 (0.004)	0.003 (0.002)	-0.001 (0.003)	0.003 (0.002)
Time trend	-	Linear	Quadratic	Quadratic	Quadratic	Quadratic
Occupation FE				✓		✓
Firm FE					✓	✓

Note: 122,092 observations. All regressions include calendar month indicators. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Panel B: Repeated hires

	Predicted log(posted wage)			Δ pred. log(posted wage)		
	(1)	(2)	(3)	(4)	(5)	(6)
Post \times Female	0.006 (0.005)	-0.011 (0.008)	-0.013 (0.011)	0.002 (0.005)	-0.008 (0.009)	0.000 (0.012)
Female	-0.166*** (0.004)	-0.155*** (0.007)	-0.157*** (0.009)	-0.002 (0.004)	0.005 (0.007)	0.003 (0.011)
Post	0.002 (0.003)	-0.001 (0.004)	0.002 (0.006)	0.003 (0.002)	-0.002 (0.005)	-0.008 (0.007)
Time trend	-	Linear	Quadratic	-	Linear	Quadratic

Note: 29,944 observations. All regressions include calendar month indicators. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

3.3 Robustness checks

In the previous analysis, we assumed that job ads included wage postings as of March 2011, when the new law went into effect. However, as shown in Figure 3, many firms

initially did not comply with the new requirement because it was not enforced on the job board until July 2011. To test whether our results are affected by this transition period, we omit all vacancies posted during these four months and repeat the analysis. The upper panel of Table A.3 of the appendix reports the results, showing that the estimated reform effect remains very similar.

Another constraint of our estimation sample is that we can only observe gender differences among hires who were mediated by the public employment service. Although we estimate null effects in this sample, wage transparency might affect other groups of workers differently. For non-mediated vacancies, the hires are not recorded, but social security records can be linked to a subset of job postings at the firm level. We use these firm links to find the closest firm hire in a 30-days interval around the date on which a vacancy was removed.⁸ Because a correct worker-vacancy match cannot be guaranteed, we can only estimate the gender of hires with some degree of measurement error. Yet, it allows us to obtain a much larger and more representative sample. As shown in the last column of Table A.1 in the appendix, education groups and posted-wage levels are similar to those of the average vacancy.

To evaluate the extent of measurement error, we compare estimates for the matched hires to estimates for the actual hires in the sample of mediated vacancies. Using the matched hires reduces the pre-reform gender gap in posted wages from 15 log points to approximately 12 log points. This shows that, although some workers are not correctly matched to vacancies, the remaining wage gap is still considerable and can be used as an outcome to analyze transparency effects. The bottom panel of Table A.3 reports regression results for the sample of matched hires, which again show that wage transparency in job postings did not alter gender sorting into better or worse paying jobs. As for mediated hires, the impact is close to zero and statistically insignificant in all six specifications.

4 Conclusions

Pay transparency has recently received significant attention as a policy tool to narrow the gender wage gap. These efforts presume that female workers, who tend to earn lower wages, are unaware of these differences and will choose different jobs or bargain more if wage transparency increases. Most of the existing transparency laws require firms to reveal wages or compile wage reports about the current employees. This helps coworkers to compare their pay but the data are often less accessible to outsiders.

⁸If multiple workers were hired on the closest date, we assign the female share among all hires.

In this paper, we study an alternative policy that requires firms to provide at least a lower bound for wages already in their job ads. Linking Austrian vacancy data to information on eventual hires, we show that such wage postings do not change the probability of women working in higher-paid jobs. The gender wage gap is precisely estimated and remains constant during the period of observation, which allows us to rule out even smaller reform effects. Further analyses of job-to-job transitions show that a lack of worker mobility cannot rationalize the null effect. Many job seekers find new employment at firms and in occupations that differ in pay from their previous job.

We interpret the absence of effects as evidence that missing wage transparency is not the root of persistent gender differences in the labor market. Pinning down the definite reasons is beyond the scope of this paper and warrants further research. Financial gains from switching to a better-paid job may not outweigh preferences for a specific employer or occupation. Previous studies show that other non-pecuniary amenities such as flexible working hours or short commuting times are more important for female workers, especially if additional child care responsibilities exist (Redmond and McGuinness, 2020; Le Barbanchon et al., 2021). Hiring discrimination of employers might additionally limit a shift towards better-paid jobs even when preferences change due to increased transparency.

References

- Baker, M., Halberstam, Y., Kroft, K., Mas, A., and Messacar, D. (2019). Pay transparency and the gender gap. Technical report, National Bureau of Economic Research.
- Bennedsen, M., Simintzi, E., Tsoutsoura, M., and Wolfenzon, D. (2019). Do firms respond to gender pay gap transparency? Technical report, National Bureau of Economic Research.
- Blau, F. D. and Kahn, L. M. (1997). Swimming upstream: Trends in the gender wage differential in the 1980s. *Journal of Labor Economics*, 15(1, Part 1):1–42.
- Blau, F. D. and Kahn, L. M. (2000). Gender differences in pay. *Journal of Economic Perspectives*, 14(4):75–99.
- Blau, F. D. and Kahn, L. M. (2006). The US gender pay gap in the 1990s: Slowing convergence. *ILR Review*, 60(1):45–66.
- Blau, F. D. and Kahn, L. M. (2017). The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature*, 55(3):789–865.
- Blundell, J. (2020). Wage responses to gender pay gap reporting requirements. Technical report.
- Böheim, R., Fink, M., and Zulehner, C. (2021). About time: The narrowing gender wage gap in Austria. *Empirica*, 48(4):803–843.
- Böheim, R. and Gust, S. (2021). The Austrian pay transparency law and the gender wage gap. Technical report, CESifo Working Paper.
- Card, D., Cardoso, A. R., and Kline, P. (2016). Bargaining, sorting, and the gender wage gap: Quantifying the impact of firms on the relative pay of women. *Quarterly Journal of Economics*, 131(2):633–686.
- Card, D., Colella, F., and Lalive, R. (2021). Gender preferences in job vacancies and workplace gender diversity. Technical report, National Bureau of Economic Research.
- Casarico, A. and Lattanzio, S. (2019). What firms do: Gender inequality in linked employer-employee data. Technical report, Cambridge Working Papers in Economics.
- Duchini, E., Simion, S., and Turrell, A. (2020). Pay transparency and cracks in the glass ceiling. Technical report, Warwick Economics Research Papers.

- Frimmel, W., Schmidpeter, B., Wiesinger, R., and Winter-Ebmer, R. (2022). Mandatory wage posting, bargaining and the gender wage gap. Technical report.
- Goldin, C. (2014). A grand gender convergence: Its last chapter. *American Economic Review*, 104(4):1091–1119.
- Gulyas, A., Seitz, S., and Sinha, S. (2021). Does pay transparency affect the gender wage gap? Evidence from Austria. Technical report, ZEW Discussion Paper.
- Le Barbanchon, T., Rathelot, R., and Roulet, A. (2021). Gender differences in job search: Trading off commute against wage. *Quarterly Journal of Economics*, 136(1):381–426.
- Morchio, I. and Moser, C. (2021). The gender pay gap: Micro sources and macro consequences. Technical report, CEPR Discussion Paper No. DP16383.
- Redmond, P. and McGuinness, S. (2020). Explaining the gender gap in job satisfaction. *Applied Economics Letters*, 27(17):1415–1418.
- Seitz, S. and Sinha, S. (2022). Pay transparency, workplace norms, and gender pay gap. Early evidence from Germany. Technical report.
- Zweimüller, J., Winter-Ebmer, R., Lalive, R., Kuhn, A., Wuellrich, J.-P., Ruf, O., and Büchi, S. (2009). Austrian social security database. Technical report, IEW Working Paper.

Appendix

Table A.1: Vacancy characteristics

	All vacancies	With predictions	Mediated hires	Repeated hires	Matched hires
Female share			0.385 (0.480)	0.284 (0.436)	0.391 (0.464)
Pred. log(posted wage)		7.540 (0.222)	7.500 (0.184)	7.510 (0.170)	7.551 (0.225)
Full-time	0.720 (0.449)	0.814 (0.389)	0.823 (0.381)	0.875 (0.330)	0.831 (0.375)
<u>Education:</u>					
No/comp. school.	0.349 (0.477)	0.349 (0.477)	0.440 (0.496)	0.525 (0.499)	0.355 (0.478)
Vocational training	0.532 (0.499)	0.537 (0.499)	0.504 (0.500)	0.457 (0.498)	0.515 (0.500)
Higher school./university	0.119 (0.324)	0.114 (0.317)	0.055 (0.229)	0.018 (0.133)	0.131 (0.337)
<u>Firm size:</u>					
Small firm (<10)	0.447 (0.497)	0.373 (0.484)	0.378 (0.485)	0.359 (0.480)	0.298 (0.457)
Medium firm (10-100)	0.377 (0.485)	0.411 (0.492)	0.441 (0.496)	0.447 (0.497)	0.422 (0.494)
Large firm (100+)	0.176 (0.381)	0.216 (0.412)	0.181 (0.385)	0.194 (0.395)	0.281 (0.449)
Observations	911,237	560,248	122,092	29,944	296,874

Note: Table reports means with standard deviations in parenthesis.

Table A.2: Transparency effect by level of education

	Predicted log(posted wage)		
	No/comp. schooling	Vocational training	Higher schooling
Post × Female	-0.011 (0.009)	-0.007 (0.008)	-0.024 (0.024)
Female	-0.113*** (0.009)	-0.180*** (0.006)	-0.166*** (0.018)
Post	0.005 (0.005)	-0.009* (0.004)	-0.001 (0.019)
Observations	53,733	61,586	6,773

Note: All regressions include calendar month indicators and a quadratic time trend. * p<0.10, ** p<0.05, *** p<0.01

Table A.3: Robustness checks

Panel A: Mediated hires excluding transition period

	Predicted log(posted wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
Post \times Female	0.005** (0.003)	-0.000 (0.005)	0.001 (0.008)	-0.011** (0.005)	0.007* (0.004)	-0.001 (0.003)
Female	-0.153*** (0.002)	-0.150*** (0.004)	-0.152*** (0.006)	-0.015*** (0.003)	-0.052*** (0.003)	-0.006** (0.002)
Post	0.003* (0.002)	-0.008*** (0.003)	-0.004 (0.005)	0.006* (0.003)	-0.003 (0.004)	0.004 (0.002)
Time trend	-	Linear	Quadratic	Quadratic	Quadratic	Quadratic
Occupation FE				✓		✓
Firm FE					✓	✓

Note: 111,945 observations. All regressions include calendar month indicators. * p<0.10, ** p<0.05, *** p<0.01

Panel B: Matched hires

	Predicted log(posted wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
Post \times Female	-0.004 (0.003)	-0.009 (0.006)	-0.002 (0.009)	-0.002 (0.004)	-0.002 (0.003)	-0.000 (0.002)
Female	-0.106*** (0.002)	-0.102*** (0.004)	-0.106*** (0.006)	-0.010*** (0.002)	-0.005* (0.003)	-0.002 (0.001)
Post	0.028*** (0.003)	0.002 (0.004)	-0.002 (0.005)	-0.000 (0.002)	-0.000 (0.002)	0.000 (0.001)
Time trend	-	Linear	Quadratic	Quadratic	Quadratic	Quadratic
Occupation FE				✓		✓
Firm FE					✓	✓

Note: 296,898 observations. All regressions include calendar month indicators. * p<0.10, ** p<0.05, *** p<0.01