

The effects of Colorado’s Pay Transparency among Older Workers

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August 24, 2026

Abstract

This paper studies the effects of Colorado’s cross-firm pay transparency law, the Equal Pay for Equal Work Act (EPEWA), on the labor market outcomes of mid- to late-career workers aged 45–64. I examine how improved information about outside wage opportunities affects earnings, the gender wage gap, and labor supply for a group that may face relatively high search frictions and outdated wage information. Using a difference-in-differences design that exploits variation across states and over time, I find that pay transparency increases both weekly earnings and hourly wages, with larger wage gains among women and highly educated workers, and narrows the gender wage gap. The wage gains are observed among both job changers and job stayers, although they are larger for job changers, and they vary across occupations with different wage levels, wage dispersion, and age–wage profiles. Turning to labor supply, pay transparency increases employment and raises main-job working hours among employed workers in the short run. In contrast, I find limited effects among younger workers aged 25–44, with positive wage effects appearing among job changers. Survey evidence further shows that pay transparency increases workers’ expectations about outside wage opportunities, raises reservation wages, and temporarily increases the perceived probability of receiving a job offer. Overall, the findings suggest that cross-firm pay transparency is particularly valuable for mid- to late-career workers, whose beliefs about outside wage opportunities are more likely to be outdated.

1 Introduction

The United States is undergoing a generational transition as Generation X moves into the later stages of its working life. As this cohort approaches retirement, continued employment and earnings are particularly relevant given its reliance on individual retirement savings and substantial financial and caregiving responsibilities. The labor force participation rate among individuals aged 55–64 remained at 65.9% in 2024, highlighting their continued attachment to the labor market. These patterns motivate studying the labor market outcomes of mid- to late-career workers, who may face different labor market frictions and job-search incentives than younger workers. Their labor market outcomes also have broader implications for retirement preparedness, workforce productivity, tax revenues, and public spending.

Wage information may be particularly important for understanding the labor market behavior of mid- to late-career workers. Previous research shows that workers may misperceive their outside options because they anchor on their current or most recent wage and adjust their beliefs or reservation wages only gradually (Krueger and Mueller, 2016; Mueller et al., 2021; Jäger et al., 2024). Resulting information limits can contribute to longer unemployment durations, worker misallocation, and market power (Mueller et al., 2021; Jäger et al., 2024; Cullen, 2024). These frictions may be especially relevant for mid- to late-career workers, who are often farther removed from their last job search and may rely on outdated wage information. This group may also face greater labor market discrimination, particularly during hiring, and longer job-search durations after job displacement (Neumark et al., 2019; Brown et al., 2025). These considerations suggest that improving access to wage information may have particularly important effects on the labor market outcomes of mid- to late-career workers.

Despite the potential importance of wage information for mid- to late-career workers, this relationship remains understudied. The literature on older workers has largely focused on job-search frictions, reemployment barriers, and hiring discrimination (Chan and Huff Stevens, 2001; Lahey, 2008; Coile et al., 2014; Neumark et al., 2019), while the innovative recent studies of wage information have not yet isolated the effects on older workers (Mas, 2017; Feng, 2024; Arnold et al., 2025). This paper bridges these two strands of literature by studying how improved wage information affects the labor market outcomes of mid- to late-career workers.

To address this question, I examine how Colorado’s pay transparency law affects the labor market outcomes of workers aged 45–64. Specifically, I estimate the effects of pay transparency on earnings, wages, the gender wage gap, and labor supply among this group. On January 1, 2021, Colorado implemented the Equal Pay for Equal Work Act (EPEWA), which requires employers to disclose compensation information in job postings, including wage or salary ranges, benefits, and other forms of compensation. By making pay information publicly available across firms, the policy expands workers’ access to wage information about outside employment opportunities. Following Cullen (2024), I refer to this feature of the policy as cross-firm pay transparency, in which workers have access to compensation information from both their current employer and other employers, providing

information about the wages associated with outside job opportunities.¹

Economic theory provides ambiguous predictions about the effects of wage information. On the worker side, wage information may reduce information frictions by helping job seekers update their beliefs about outside opportunities and adjust their reservation wages, potentially shortening job-search duration, improving worker–firm matching, and strengthening workers’ bargaining positions (Krueger and Mueller, 2016; Mueller et al., 2021). For employed workers whose beliefs are anchored to their current wages, information about outside opportunities may similarly affect wage bargaining and incentives to change jobs (Jäger et al., 2024).

On the firm side, wage information may limit employers’ ability to offer low wages and induce firms to adjust their wage-setting and hiring strategies, potentially increasing labor market competition (Jäger et al., 2024; Arnold et al., 2025). However, greater transparency may also facilitate coordination among firms, similar to the effects of price transparency in product markets, potentially increasing market power and making the overall effect of cross-firm pay transparency theoretically ambiguous (Albæk et al., 1997; Arnold et al., 2025).

To estimate the effect of Colorado’s cross-firm pay transparency policy, I use a difference-in-differences design that leverages variation across states and over time. Following Feng (2024), I use states with salary history bans but without cross-firm pay transparency requirements as the primary control group.² The main results show that the policy increases weekly earnings among mid- to late-career workers by 4.6% and hourly wages by 3.7%, with both estimates statistically significant.³ Event-study estimates show that these effects strengthen over time and become statistically significant in the later post-policy periods. These results provide evidence that cross-firm pay transparency improves the wage outcomes of mid- to late-career workers.

Heterogeneity analysis by gender shows substantial earnings and wage gains among women, while the corresponding effects among men are limited. In addition, Colorado’s pay transparency policy reduces the gender earnings gap by 6.7% and the gender wage gap by 3.7%, with both estimates statistically significant. Event-study estimates indicate that these reductions are transitory, with little evidence of persistent effects beyond the first post-policy year. Together, these findings suggest that cross-firm pay transparency reduces gender gaps through gains in women’s earnings and wages rather than reductions in those of men.

The effects of pay transparency also differ with workers’ skill levels. The results show significant earnings and wage gains among highly educated workers, together with reductions in the gender earnings and wage gaps. In contrast, the effects on earnings and wages are limited among less educated workers, while the estimates point to widening gender gaps but are not statistically significant.

¹Following Cullen (2024), cross-firm pay transparency refers to settings in which pay information is made more visible across employers, for example through posted wage ranges or external salary information; vertical pay transparency refers to settings in which employees have access to pay information about workers at different levels of seniority within the same organization; horizontal pay transparency refers to settings in which coworkers within the same organization have access to information about one another’s pay.

²These states provide a more comparable policy environment because they had already adopted salary history bans, reflecting similar restrictions on employers’ use of wage information, labor market conditions, and willingness to enact worker-protection policies.

³Both of these estimates are significant at the five percent level.

These patterns suggest that highly educated workers may be better able to use wage information in their labor market decisions, or that pay transparency matters more in the high-wage-dispersion occupations in which they are disproportionately employed.

This study examines two factors that may shape the effects of pay transparency: workers' job mobility and occupation. Previous research shows that job mobility is an important source of wage growth (Topel and Ward, 1992; Moscarini and Postel-Vinay, 2016, 2018). Examining heterogeneity by job mobility therefore helps assess whether workers benefit differently from improved wage information when changing jobs or remaining with their current employers. The results show that pay transparency increases hourly wages and reduces the gender wage gap among both job changers and job stayers, with larger effects among job changers. By contrast, there is little evidence that the policy increases overall job mobility, although the estimates suggest modest increases among men. These findings suggest that improved wage information is particularly valuable when workers change jobs, while also generating gains for those who remain with their current employers.

Occupation is a key source of wage differences and the gender wage gap (Groshen, 1991; Blau and Kahn, 2000; Autor and Handel, 2013; Faberman et al., 2026). I therefore examine how the wage effects of pay transparency vary with occupations' average wage levels, wage dispersion, and age-wage profiles to identify the occupational characteristics associated with larger gains from wage information. I find substantial heterogeneity across occupations. The estimates show a positive relationship between occupational wage dispersion and the wage effects of pay transparency, suggesting that workers in occupations with greater wage dispersion tend to benefit more from wage information and may be less informed about the full range of compensation opportunities in their labor market. Wage effects also vary systematically with occupational wage levels and age-wage profiles, with the largest gains in medium-wage occupations and occupations with moderate age-wage profiles. The reduction in the gender wage gap similarly varies with age-wage profiles and is largest in occupations with steep profiles. Together, these findings show that the benefits of pay transparency depend on the wage structure of workers' occupations and identify the types of labor markets in which reducing wage information frictions generates the largest gains.

I also examine the effects of pay transparency on labor supply outcomes among mid- to late-career workers. Pay transparency increases the employment rate by 0.6 percentage points and main-job working hours by 0.603 hours per week, corresponding to approximately 0.9% and 1.5% of their respective control-group means. Event-study estimates indicate that these labor supply responses are concentrated in the short run and do not persist in later post-policy periods.

While pay transparency laws meaningfully improve the circumstances of older workers, they have very limited effects on young workers. When focusing on younger workers aged 25–44, the results indicate that Colorado's pay transparency law has limited effects on weekly earnings, hourly wages, employment, and main-job working hours. The policy also provides little evidence of increasing job mobility among younger workers. The only clear wage effect appears among younger job changers, whose hourly wages increase substantially following the policy's implementation. These findings suggest that older workers, with their less frequent job transitions, potentially stale market knowledge,

and greater search frictions, appear to be the primary beneficiaries of enhanced wage transparency.

To understand the mechanisms and decision processes by which wage transparency laws affect older workers, I turn to data from the SCE Labor Market Survey to examine how pay transparency is associated with mid- to late-career workers' beliefs about outside opportunities, including expected outside-option wages, reservation wages, and the perceived probability of receiving a job offer. The descriptive evidence shows that workers do, in fact, increase their expectations regarding outside-option wages and raise their reservation wages following the introduction of pay transparency laws. The expectations about outside-option wages and reservation wages rise gradually following the introduction of pay transparency. By contrast, workers' expectations regarding the probability of receiving an offer rise briefly and then return to baseline following the law change. These patterns suggest that pay transparency primarily changes how workers assess the value of outside opportunities rather than persistently altering their beliefs about the likelihood of obtaining them. This interpretation also helps reconcile the dynamic results: the persistent updating of wage beliefs is consistent with wage gains that grow over time, whereas the temporary increase in perceived offer probabilities parallels the short-run effects on employment and working hours.

My study contributes to several strands of the literature on labor markets. First a large body of research shows that older workers face greater labor market difficulties and discrimination, particularly during the job search process. Chan and Huff Stevens (2001) finds that workers aged 50 and above have greater difficulty finding employment after involuntary job loss and face a higher risk of subsequent labor market exit. Other studies provide evidence of age discrimination in hiring. Lahey (2008) finds that older workers are less likely to receive interview callbacks, while Neumark et al. (2019) documents particularly strong age discrimination against older women. Coile et al. (2014) further shows that the labor market challenges faced by older workers become more severe during recessions. This paper contributes to this literature by examining whether cross-firm pay transparency improves the labor market outcomes of mid- to late-career workers. The analysis is particularly relevant for older women, who may face disadvantages associated with both age and gender in the labor market.

Second, it contributes to the growing literature on pay transparency. Most previous research focuses on horizontal pay transparency, under which workers observe the pay of their coworkers or peers within the same organization. Previous studies provide evidence that horizontal pay transparency can reduce average wages and wage dispersion, increase job search, and lower job satisfaction (Card et al., 2012; Mas, 2017; Cullen and Pakzad-Hurson, 2023). A related literature examines the effects of horizontal pay transparency on gender wage inequality. These studies find that pay transparency narrows the gender wage gap primarily by reducing wage growth among men, with more limited increases in wage growth among women (Baker et al., 2023; Bennedsen et al., 2022).

My study instead focuses on cross-firm pay transparency, which provides workers with information not only about pay within their current workplace but also about compensation at other firms and, therefore, their outside opportunities. A relatively small literature examines this form of

pay transparency. Skoda (2022) studies Slovakia’s cross-firm pay transparency law and finds that requiring wage information in job advertisements increases the wages of newly hired workers and redirects job search toward better-paying opportunities. Two recent studies examine Colorado’s pay transparency law. Arnold et al. (2025) shows that the law increased the share of firms posting wage information while having little effect on the width of posted wage ranges. The authors also find that the policy increased average wages, partly through greater competition among firms. Feng (2024) finds that Colorado’s policy reduced the gender wage gap primarily among job changers but had no significant effect on employment. My study contributes to this emerging literature by demonstrating that the pay transparency benefits accrue largely to older workers, a group that often faces greater barriers to job search, lower reemployment prospects, and age-related discrimination.

Finally, this study contributes to the literature on workers’ beliefs about outside options and the role of wage information in shaping labor market outcomes. Existing research shows that workers often have imperfect beliefs about outside opportunities and may anchor their expectations and reservation wages to previous or current wages (Krueger and Mueller, 2016; Mueller et al., 2021; Jäger et al., 2024). Providing information about outside opportunities can update these beliefs and affect job search, mobility, and wage outcomes (Caldwell and Harmon, 2019; Roussille, 2021), while restrictions on employers’ access to workers’ wage histories can also affect hiring and wages (Barach and Horton, 2021). This paper contributes to our understanding of workers’ beliefs by examining how a policy that expands access to outside wage information affects the labor market outcomes of mid- to late-career workers and whether it changes their beliefs about outside labor market opportunities.

The remainder of the paper is organized as follows. Section 2 describes the policy background, Section 3 presents the empirical strategy, and Section 4 describes the data. Section 5 presents the main wage results and heterogeneity by gender and education. Section 6 examines heterogeneity by job mobility and occupation, and Section 7 presents the labor supply results. Section 8 examines workers’ labor market beliefs using the SCE, Section 9 presents robustness checks, and Section 10 concludes.

2 Pay Transparency Background

2.1 Colorado Equal Pay for Equal Work Act

This study focuses on Colorado’s cross-firm pay transparency policy, the Equal Pay for Equal Work Act (EPEWA), which took effect on January 1, 2021. This Act is the earliest state-level cross-firm pay transparency law in the United States. To reduce pay disparities in Colorado and ensure that employees performing substantially similar work receive equal compensation, the EPEWA requires all employers, regardless of firm size, to disclose compensation and benefits information in job postings, notify employees of promotion opportunities, maintain records of job descriptions and compensation, and refrain from asking about or relying on applicants’ pay history. Since the law applies to employers with at least one employee, it creates a statewide change in the wage information posting faced by all workers, job seekers, and firms.

With respect to the disclosure of compensation and benefits information, EPEWA requires covered employers to provide information on the rate of pay, or a range of possible pay, that the hired applicant may receive, along with a general description of other forms of compensation, such as bonuses, commissions, or tips (Colorado Department of Labor and Employment, 2024). Employers are expected to post a range that reflects a good-faith assessment of what they may pay for the position, taking into account factors such as the applicant’s qualifications, the nature of the job, and the employer’s compensation practices. The range therefore cannot be so broad that it fails to describe the compensation actually associated with the advertised position. Similarly, employers cannot rely on pay levels for different or more senior positions to justify an inflated range for the job being posted. The law also requires the posted range to include both a lower and an upper bound, rather than open-ended statements. Although the final wage offer may differ from the posted range, the disclosure must reflect the employer’s genuine expectations at the time the job is advertised.

In addition, EPEWA requires job postings to include a general description of the benefits associated with the position, including health care, retirement benefits, paid time off, and other tax-reportable benefits (Colorado Department of Labor and Employment, 2024). Employers are not required to provide detailed plan information or specific dollar values for these benefits. However, the posting must describe the nature of the benefits offered, rather than using open-ended phrases such as “etc.” or “and more” (Colorado Department of Labor and Employment, 2024).

Enforcement of EPEWA’s pay transparency provisions is administered by the Colorado Department of Labor and Employment (CDLE) and follows an education-first approach. Individuals may report potentially noncompliant postings, after which the Department may investigate and provide compliance assistance to employers. Employers are generally given an opportunity to correct violations before monetary penalties ranging from \$500 to \$10,000 per posting are imposed. Although monetary penalties are legally available, enforcement has primarily relied on compliance assistance. As of October 2024, the CDLE had received 1,747 complaints and collected \$238,000 in fines (Arnold et al., 2025). Moreover, The CDLE regulates employers’ activities in other ways, including enforcing labor standards and determining firms’ unemployment insurance tax rates. Therefore the cost of noncompliance may reach beyond monetary fines to reputation costs with the employer’s regulator and community.

The geographic scope of the law is also important for understanding firms’ potential responses. Because the pay disclosure requirement applies to covered employers with employees in Colorado, it may also affect postings for remote jobs that could be performed by Colorado workers (Arnold et al. (2025)). After the law took effect, some firms reportedly attempted to avoid disclosure requirements by excluding Colorado applicants from remote positions (Rubino (2021)). In response, CDLE clarified that covered employers could not avoid the law simply by stating that a remote position could not be performed in Colorado if the employer otherwise fell under Colorado’s jurisdiction. At the same time, positions tied entirely to locations outside Colorado, or postings by firms with no employees in Colorado, may fall outside the scope of the law. These rules are relevant for the empirical analysis because firms could respond to pay transparency requirements not only by changing posted wages,

but also by adjusting their recruiting strategies, job locations, or willingness to hire workers in Colorado.

2.2 Salary History Ban and the Selection of Control States

In addition to the pay transparency provisions, EPEWA also introduced a salary history ban (SHB), which prohibits employers from asking about or relying on applicants' salary histories when determining compensation. Following Feng (2024), I use states that had already implemented SHBs before 2021 but did not adopt pay transparency laws through 2025 as the main control group. These control states include Alabama, Connecticut, Delaware, Maine, and Oregon. These states provide a policy environment that is more comparable to Colorado than states without salary history bans because they had already adopted similar restrictions on employers' use of wage information. Using these states as the primary comparison group helps improve the comparability of the policy environment across treated and control states.

Although using SHB states improves the comparability of the policy environment, it may not fully account for the effects of Colorado's simultaneously implemented SHB policy. To examine the sensitivity of the results, Section 9.2 presents robustness checks using alternative control groups and a triple-differences specification that explicitly accounts for salary history ban policies.

2.3 Pay Transparency Policies in Other States

Several states and local jurisdictions adopted pay transparency policies following Colorado's Equal Pay for Equal Work Act (EPEWA). In 2022, local jurisdictions including New York City and Jersey City implemented pay transparency requirements for job postings. In January 2023, California and Washington became the next two states to adopt statewide pay transparency laws. Both laws apply to employers with at least 15 employees, although their disclosure requirements differ from Colorado's. Figure 1 summarizes the implementation timeline of statewide pay transparency laws and identifies the control states used in the main analysis.

This study focuses primarily on Colorado's pay transparency policy for three reasons. First, Colorado became the first state to implement a statewide pay transparency law in 2021, two years before similar laws took effect in California and Washington in 2023, providing a substantially longer post-treatment period. Because the available data cover only the period from 2014 to 2025, the pay transparency laws adopted in other states and municipalities provide too few post-treatment periods for a meaningful analysis.⁴ Second, Colorado's law applies to employers regardless of firm size, whereas the California and Washington laws apply only to employers with at least 15 employees. Third, Colorado requires employers to disclose both compensation information and a general description of benefits and other forms of compensation, while California requires employers to disclose only the expected pay scale. These features make Colorado's policy the broadest statewide

⁴Later state-wide pay transparency states: New York, September 2023; Hawaii, January 2024; Washington D.C., July 2024; Maryland, October 2024; Illinois, January 2025; Minnesota, January 2025; New Jersey, June 2025; Massachusetts, July 2025; Vermont, July 2025.

pay transparency reform during the sample period and provide the primary source of identification in this paper.

California and Washington are examined as supplementary evidence rather than the primary source of identification. In addition, Washington implemented several other labor market policies in 2023 that may independently affect labor market outcomes. The state minimum wage increased from \$14.49 to \$15.74 per hour (approximately 8.6%), substantially larger than Colorado’s 2.7% (increased by 3.2 cents per hour) increase in 2021. Washington also introduced the WA Cares Fund payroll contribution, requiring workers to contribute 0.58% of gross wages beginning in July 2023. These contemporaneous policy changes may affect wages, employment, and labor supply independently of pay transparency, making it more difficult to isolate the effects of the disclosure requirement. For these reasons, Colorado serves as the primary policy shock, while the later reforms in California and Washington are used mainly as supplementary evidence.

Therefore, these later policies are not the primary focus of this study.

3 Empirical Strategy

The objective of this study is to identify the causal effect of Colorado’s pay transparency policy on labor market outcomes among mid- to late-career workers. To isolate the aggregate causal effect of pay transparency, I employ a difference-in-differences regression by comparing mid- to late-career workers in Colorado with those in other control states:

$$Y_{igm} = \beta \text{CO}_{ig} \times \text{Post}_m + X'_{igm}\gamma + \lambda M_{sm} + \omega_{ot} + \mu_{jt} + \delta_m + \theta_g + \varepsilon_{igm}, \quad (3.1)$$

where i indexes individuals, s indexes states, g indexes metropolitan areas, t is calendar year, and m is calendar month (defined as year-by-month cells). Y_{igm} denotes the outcome variable for individual i in metropolitan area g in calendar month m . The outcomes include weekly earnings, hourly wage, employment, and hours worked. The variable CO_{ig} is an indicator equal to one for whether individuals reside in metropolitan area g in Colorado, and Post_m is an indicator equal to one for the post-policy period, defined as January 2021 and later. The coefficient of interest is β that measures the DiD estimate of the effect of pay transparency.

X_{igm} is a vector of individual-level controls, including sex, age, marital status, education level, family size, race, the number of children in the household, the number of own children in the household, whether the worker is paid hourly, and whether the worker is employed in the public sector. M_{sm} denotes the state-month unemployment rate. I also include occupation-by-year fixed effects, ω_{ot} , and industry-by-year fixed effects, μ_{jt} , to control for occupation- and industry-specific time trends. In addition, δ_m denotes year-month fixed effects, and θ_g denotes metropolitan area fixed effects.

I estimate an alternative specification to identify the overall effect of pay transparency on the gender wage gap, I use a triple-differences specification. This approach measures the marginal effect of pay transparency on women’s hourly wages relative to its effect on men’s hourly wages.

$$Y_{igm} = \beta_1^G \text{CO}_{ig} \times \text{Post}_m + \beta_2^G \text{CO}_{ig} \times \text{Post}_m \times \text{Female}_i + \phi \text{Post}_m \times \text{Female}_i + X'_{igm} \gamma + \lambda M_{sm} + \omega_{ot} + \mu_{jt} + \delta_m + \theta_g + \eta_{fg} + \varepsilon_{igm}, \quad (3.2)$$

where Y_{igm} denotes the hourly wage of individual i in metropolitan area g in calendar month m . Female_i is an indicator equal to one if individual i is female. η_{fg} denotes female-by-metropolitan-area fixed effects. The coefficient β_1^G measures the effect of Colorado's pay transparency policy on men's hourly wages, and the coefficient of interest β_2^G measures the marginal effect of pay transparency on women's hourly wages relative to men's hourly wages. Therefore, β_2^G captures the effect of pay transparency on the gender wage gap. A positive value of β_2^G indicates that the policy increases women's wages relative to men's wages, thereby reducing the gender wage gap.

I also use a difference-in-differences event-study design to examine how the effects of pay transparency evolve over event time and to test for pre-trends.

$$Y_{igm} = \sum_{e=-7}^4 \alpha_e (\text{CO}_{ig} \times 1\{\tau_t = e\}) + X'_{igm} \gamma + \lambda M_{sm} + \omega_{ot} + \mu_{jt} + \delta_m + \theta_g + \varepsilon_{igm}, \quad (3.3)$$

where Y_{igm} denotes the hourly wage. The term $1\{\tau_t = e\}$ is an event-time indicator equal to one if calendar time τ_t is e periods away from the implementation of Colorado's pay transparency policy, and zero otherwise. The coefficient of interest is α_e measuring the dynamic effect of the policy relative to the pre-policy baseline period. Because the sample size is relatively small within each year-month cell, I define event time at the annual level. Therefore, the coefficients α_e capture the average effect in each event year relative to the omitted pre-policy baseline period.

To identify the effects of pay transparency on the gender wage gap, I use the triple differences event-study method to identify the increment to the pay transparency effect on hourly wage for women compared to that for men:

$$Y_{igm} = \sum_{e=-7}^4 \alpha_{1e}^G (\text{CO}_{ig} \times 1\{\tau_t = e\}) + \sum_{e=-7}^4 \alpha_{2e}^G (\text{CO}_{ig} \times 1\{\tau_t = e\} \times \text{Female}_i) + \phi \text{Post}_m \times \text{Female}_i + X'_{igm} \gamma + \lambda M_{sm} + \omega_{ot} + \mu_{jt} + \delta_m + \theta_g + \eta_{fg} + \varepsilon_{igm}, \quad (3.4)$$

where Y_{igm} denotes the hourly wage. The coefficients α_{1e}^G measure the dynamic effects of pay transparency on men's hourly wages relative to the pre-policy baseline period. The coefficients α_{2e}^G measure the dynamic effects of pay transparency on women's hourly wages relative to men's hourly wages. A positive value of α_{2e}^G indicates that pay transparency increases women's wages relative to men's wages, thereby reducing the gender wage gap.⁵

⁵Because the main event-study specification exploits a single treatment cohort (Colorado) and a common treatment date (January 2021), it is not subject to the heterogeneous treatment effect concerns that arise in staggered-adoption difference-in-differences designs, where already-treated units may serve as controls for later-treated units (Goodman-Bacon, 2021; Sun and Abraham, 2021; Callaway and Sant'Anna, 2021).

4 Data and Descriptive Statistics

4.1 CPS Data and Sample

The main data source used in this study is the IPUMS-CPS version of the Monthly Current Population Survey (CPS) from 2014 to 2025 (Flood et al., 2023). The CPS is a nationally representative monthly household survey conducted by the U.S. Census Bureau for the Bureau of Labor Statistics. It follows a 4-8-4 rotation design, under which households are interviewed for four consecutive months, leave the sample for eight months, and then return for another four months. This design allows individuals to be linked across survey months to examine employer changes and other labor market transitions.

The Monthly CPS contains detailed information on employment, labor force participation, hours worked, occupation, industry, and demographic characteristics. It also records whether employed respondents worked for the same employer as in the previous survey month, which I use to construct measures of employer changes. Because this measure contains substantial missing values, I also use changes in industry as a complementary measure of job mobility.

Because the basic Monthly CPS does not contain detailed earnings and wage information for all respondents, this study also uses the CPS Outgoing Rotation Group (ORG) supplement. The ORG supplement collects earnings information from employed respondents in the final month of each CPS rotation, specifically in the 4th and 8th survey months. It provides information on weekly earnings for employed workers and hourly wages for workers who are paid by the hour. For workers who are not paid hourly, I construct an hourly wage measure by dividing weekly earnings by usual weekly hours worked on the main job. This approach allows me to obtain a consistent hourly wage measure for both hourly and non-hourly workers in the ORG sample.

This study focuses on mid- to late-career individuals, so I restrict the main sample to individuals aged 45 to 64. I exclude individuals aged 65 and above to avoid confounding the analysis with labor supply changes related to Medicare eligibility and retirement decisions. I restrict the estimation sample to US citizens who reside in metropolitan areas. I drop those who are self-employed. I focus on metropolitan areas because pay transparency is more likely to affect workers in thicker labor markets where job postings, employer competition, and outside options are more salient. I exclude self-employed workers because the policy primarily affects employer-employee wage setting through wage information disclosed in job postings, whereas self-employed workers do not face the same posted-wage-setting process.

In addition, I choose control states that had already implemented salary history bans before 2021 but did not have similar cross-firm pay transparency requirements during the study period. After applying this restriction, the control group includes Alabama, Connecticut, Delaware, Maine, and Oregon. Based on the sample selection criteria, the final sample contains 219,360 observations, including 33,366 observations from Colorado and 185,994 observations from the SHB control states. Among the ORG sample, the final sample size is 38,411 observations, of which 6,164 are from Colorado and 32,247 are from the other SHB control states.

4.2 Descriptive Statistics

Table 1 reports summary statistics for the analysis sample by treatment status. Overall, individuals in Colorado and the comparison states have broadly similar demographic and labor market characteristics. Age, sex, and marital status are similar across the two groups. The largest demographic differences are in educational attainment, where Colorado has a higher share of individuals with bachelor’s or graduate degrees and a lower share with only a high school education. Racial composition also differs, with Colorado having a lower share of Black individuals and a higher share of Hispanic individuals than the comparison states. Household characteristics, including family size and the number of children, are broadly comparable across groups.⁶

Compared with the SHB control states, Colorado has slightly higher labor force participation and employment rates, with both differences amounting to approximately 3.6 percentage points. Colorado also has a somewhat larger share of individuals who ever changed employers. Among employed individuals, workers in Colorado are less likely to be paid hourly, slightly more likely to work in the public sector, and exhibit a modestly higher rate of employer changes, but these differences are generally small in magnitude. Employed workers in Colorado also work approximately 0.8 more hours per week, both across all jobs and in their main job. The largest differences are observed for earnings, with employed workers in Colorado earning substantially higher weekly earnings and hourly wages than their counterparts in the comparison states.

Figure 2 shows how labor market outcomes vary with age in my sample. The figure shows that the employment rate remains relatively stable through prime working ages but starts to decline around age 45, with the decline becoming much sharper after age 50. Working hours in the main job among employed individuals increase gradually at younger ages, but begin to decline around age 50 and fall more sharply as individuals approach retirement age. This pattern is consistent with previous evidence that older workers have weaker incentives to remain employed or to continue working intensive hours (Neumark et al., 2019). In addition, weekly earnings initially increase with age and then become relatively stable after around age 40, followed by a slight decline after approximately age 50. Similarly, hourly wages increase with age at younger ages and become relatively stable after around age 40.

Moreover, Figure 3 shows the raw trends in labor market outcomes over time by treatment status and age group. The red solid line represents mid- to late-career individuals aged 45–64 in Colorado, while the red dashed line represents individuals aged 45–64 in the other SHB states. The blue lines represent the relatively younger group aged 25–44, with the solid line for Colorado and the dashed line for the other SHB states.

The figure shows that, among individuals aged 45–64 in Colorado, both the employment rate and main-job working hours increase sharply in the short run after the implementation of the policy, but return closer to their previous levels in the longer run. In contrast, there is no comparable post-policy increase among the other groups. Furthermore, weekly earnings and hourly wages for individuals

⁶The large sample size allows relatively small differences in means to be estimated precisely, so statistical significance should not be interpreted as evidence of economically meaningful differences.

aged 45–64 in Colorado exhibit a more pronounced upward trend after the policy implementation, while the trends for the other groups are relatively smooth.

5 Effects of Pay Transparency on Wage and the Gender Wage Gap

5.1 Effects of Pay Transparency on Weekly Earnings and Hourly Wages

In this section, I report estimates of the effects of Colorado’s pay transparency law on weekly earnings and hourly wages among mid- to late-career workers. This analysis assesses whether reducing compensation information frictions improves wage outcomes for workers who may face greater age-related barriers in the labor market and whose beliefs about outside opportunities may be based on outdated compensation information. Pay transparency may help workers update these beliefs and better assess their current compensation relative to outside opportunities. I examine both weekly earnings and hourly wages because weekly earnings capture overall earnings from the main job, while hourly wages help distinguish changes in earnings from changes in working hours.

Table 2 reports the DiD estimates of the effect of Colorado’s pay transparency policy on weekly earnings and hourly wages among mid- to late-career workers. Columns (1) and (3) present estimates from the main DiD specification, which includes industry-by-year fixed effects, occupation-by-year fixed effects, metropolitan-area fixed effects, and year-by-month fixed effects. Columns (2) and (4) replace year-by-month fixed effects with separate year and month fixed effects, thereby reducing the dimensionality of the fixed effects in order to examine the sensitivity of the results to the choice of fixed effects specification. This alternative specification still accounts for common annual shocks and recurring seasonal patterns but imposes a less saturated specification of the time fixed effects.

Column (1) shows that pay transparency increases weekly earnings among mid- to late-career workers by 4.6%, and column (2) shows that the estimated effect remains similar at 4.2 % when year-by-month fixed effects are replaced with separate year and month fixed effects. Both estimates are statistically significant, indicating that the results are robust to alternative specifications of the time fixed effects. The results suggest that reducing compensation information frictions through pay transparency increases weekly earnings among mid- to late-career workers. These earnings gains may result from higher hourly wages, longer working hours, or both.

Additionally, these results for mid- to late-career workers are directionally consistent with the findings of Arnold et al. (2025), who use Quarterly Census of Employment and Wages (QCEW) data through the second quarter of 2024 and estimate that Colorado’s pay transparency law increased weekly wages by 1.4 % for the overall workforce. The estimated effect reported here (4.6 %) is substantially larger. The event-study estimates presented below and the analysis for younger workers reported in the following subsections help explain this difference. The event-study estimates show that the effect of pay transparency emerges gradually over time, suggesting that the longer post-policy period covered in this study through 2025 captures additional wage growth. More importantly, I find that the effect of pay transparency on weekly earnings is limited among younger workers, whereas the positive effect is concentrated among mid- to late-career workers. Because the estimates in

Arnold et al. (2025) reflect an average across workers of all ages, they would naturally be expected to lie below the estimates reported here for older workers. This pattern is also consistent with the idea that mid- to late-career workers are more likely to hold outdated beliefs about market wages and therefore benefit more from improved access to information about outside wage opportunities.

Columns (3) and (4) report the corresponding results for hourly wages. The estimate in column (3) indicates that Colorado’s pay transparency policy increased hourly wages by 3.7%, and column (4) shows a similar effect of 3.3% under the alternative fixed-effect specification. Both estimates are statistically significant. The positive effect on hourly wages suggests that part of the increase in weekly earnings reflects higher hourly wage among mid- to late-career workers. The positive effect on hourly wages is consistent with the idea that reducing compensation information frictions allows workers to update their beliefs about outside options and strengthens their bargaining position, leading to higher hourly wages. In addition, as Arnold et al. (2025) argues, pay transparency may also increase competition among firms, which provides another possible channel through which wage rates increase. Taken together, the evidence suggests that improved access to compensation information raises hourly wages among mid- to late-career workers.

Figure 4 presents the corresponding event-study estimates for weekly earnings and hourly wages among mid- to late-career workers, showing how the effects of Colorado’s pay transparency policy evolve over time. In each panel, the x-axis indicates the year relative to the implementation of the pay transparency policy in 2021, ranging from 7 years before the policy to 4 years after the policy. For each event-study specification, I use 2019, two years before the policy implementation, as the omitted base year. I choose 2019 rather than 2020 because 2020 coincides with the COVID-19 pandemic, and using it as the base year could introduce noise arising from differential pandemic-related shocks across states.

The first panel presents the event-study estimates for the effect of pay transparency on weekly earnings among mid- to late-career workers. Although the estimate for 2020 deviates somewhat from the otherwise relatively flat pre-policy pattern, the pre-policy estimates do not exhibit a systematic trend, supporting the parallel trends assumption. In the post-policy period, the coefficients are generally positive. Starting in the second post-policy year, the estimates show an upward pattern and become statistically significant, especially in the second and fourth post-policy periods. This pattern suggests that the effect of pay transparency on weekly earnings was limited in the initial implementation period but gradually increased over time, consistent with the idea that workers gradually respond to improved information about market compensation.

The second panel presents the DiD event-study estimates for hourly wages among mid- to late-career workers. The pre-policy estimates are generally close to zero and do not exhibit a systematic trend, although the estimate for 2020 departs from the otherwise relatively flat pre-policy pattern and may reflect COVID-19-related wage shocks that differed between Colorado and the other salary-history-ban states. I examine this concern and the diagnostic analysis of the estimated policy effects in Appendix G. In the post-policy period, the estimated effects are limited at the beginning of the policy implementation period, but the coefficients are generally positive and display an upward

pattern over time. Beginning in the third post-policy year, the estimated effects become statistically significant. This pattern suggests that Colorado’s pay transparency policy gradually increased hourly wages among mid- to late-career workers, with the effects becoming more pronounced in later post-policy years.

Therefore, the event-study evidence suggests that Colorado’s pay transparency policy led to gradual improvements in both weekly earnings and hourly wages among mid- to late-career individuals, with stronger effects emerging in later post-policy years. This pattern shows that the wage effects of pay transparency may take time to emerge as both workers and firms respond to improved information about market compensation.

To address concerns that the constructed hourly wage measure for non-hourly-paid workers may influence the results, Table A3 in Appendix B.2 reports separate estimates for hourly paid and non-hourly-paid workers using the raw CPS ORG earnings measures. The results are qualitatively similar to the main findings, suggesting that the estimated wage effects are not driven by the construction of the hourly wage measure.

Overall, these findings provide three main insights. First, the positive effect on weekly earnings indicates that pay transparency increased overall labor compensation among mid- to late-career workers. Second, the positive effect on hourly wages indicates that part of the increase in weekly earnings reflects higher wage per hour. Third, the event-study estimates suggest that these effects emerged gradually, becoming stronger in later post-policy years rather than appearing immediately after the policy implementation.

The results also highlight an important distinction between cross-firm pay transparency and the horizontal pay transparency settings emphasized in much of the existing literature. Studies of horizontal pay transparency often focus on wage information within firms and frequently find that transparency can reduce average wage growth or compress wages (Cullen and Pakzad-Hurson, 2023; Baker et al., 2023). By contrast, Colorado’s law provides workers with information about compensation in outside job opportunities. As a result, the mechanisms through which cross-firm pay transparency affects wages are likely to differ from those emphasized in the horizontal pay transparency literature. The positive wage effects documented here are consistent with the interpretation that cross-firm pay transparency improves workers’ information about outside wage opportunities. One possible channel is that workers use newly available compensation information to update their beliefs about market pay and strengthen their bargaining position. Cross-firm pay transparency may also improve worker–firm matching by helping workers identify relatively poor matches and seek better outside opportunities. Another possible channel, as suggested by Arnold et al. (2025), is increased competition among firms. These channels are less likely to operate under horizontal pay transparency, which primarily reveals wage information within firms rather than information about outside labor market opportunities. Although the present analysis does not identify the relative importance of these channels, the evidence suggests that reducing compensation information frictions through cross-firm pay transparency increases both weekly earnings and hourly wages among mid- to late-career workers.

5.2 Effect of Pay Transparency on Gender Wage Gap

One of the primary objectives of pay transparency policies is to reduce gender wage disparities since wage growth among men is generally larger than wage growth among women (Bennedsen et al. (2022)). Figure 5 plots age profiles of hourly wages for men and women before and after Colorado’s pay transparency law took effect in 2021. The left panel presents Colorado, while the right panel presents the corresponding trends in the other salary-history-ban (SHB) states. Before the policy implementation, the gender wage gap widens with age in both groups of states, suggesting that gender wage disparities are more pronounced among mid- to late-career workers than among younger workers. After the policy implementation, the gender wage gap remains relatively stable in the other SHB states but appears to narrow in Colorado among mid- to late-career workers. This pattern motivates the focus of this section, which examines whether Colorado’s pay transparency policy reduced the gender wage gap among mid- to late-career workers.

Table 3 reports the effects of pay transparency on both the weekly earnings gap and the hourly wage gap by gender. Columns (1) and (2) report DiD estimates of the marginal effect of Colorado’s pay transparency policy on women’s weekly earnings relative to men’s weekly earnings, thereby identifying the policy’s effect on the gender earnings gap. The policy increases men’s average weekly earnings by 0.9% (1.3% under the alternative fixed-effects specification), corresponding to approximately \$9 (\$13) per week relative to the control-group mean of \$1,012. These estimates are economically modest and statistically insignificant. In contrast, women’s weekly earnings increase by an additional 6.6% to 6.7% relative to men’s earnings, corresponding to approximately \$67 to \$68 per week relative to the control-group mean, and the total increase in women’s wage is 7.5% and 8.0% respectively. These estimates are statistically significant across both specifications, indicating that Colorado’s pay transparency law significantly narrows the gender earnings gap.

Columns (3) and (4) report DiD estimates of the marginal effect of Colorado’s pay transparency policy on women’s hourly wages relative to men’s hourly wages, thereby identifying the policy’s effect on the gender wage gap. The policy increases men’s hourly wages by 1.9% (1.7% under the alternative specification), corresponding to approximately \$0.28 (\$0.25) per hour relative to the control-group mean of \$14.50. However, these effects remain statistically insignificant. By contrast, women’s hourly wages increase by an additional 3.7% to 3.5% relative to men’s wages, and these estimates remain statistically significant across both specifications, and the total increase in women’s wage is 5.6% and 5.2% respectively. Therefore, the results suggest that reducing compensation information frictions regarding outside wage opportunities significantly narrows the gender wage gap among mid- to late-career workers, while wage gains for men remain relatively modest.

Figure 6 presents DiD event-study estimates corresponding to the gender earning and hourly wage gaps reported in Table 3. This triple-differences structure differences out state-by-year shocks that affect men and women within the same state in the same year similarly. Therefore, state-specific shocks during the COVID-19 period, or other state-year-level labor market shocks, are less likely to drive the estimated effects. For this reason, I use 2020, the period immediately before the policy implementation, as the omitted base period.

Both panels in Figure 6 show that the pre-treatment estimates do not exhibit clear systematic trends, although some coefficients fluctuate around zero. This pattern provides support for the parallel trends assumption. The first panel shows that the gender weekly earning gap narrows in the short run following the implementation of Colorado’s pay transparency policy. The estimated effect of pay transparency on women’s weekly earnings relative to men’s becomes positive around the implementation period and is statistically significant one and two years after the policy takes effect. Although the point estimate remains positive in the third post-treatment year, it becomes imprecisely estimated, and the effect is no longer statistically distinguishable from zero thereafter.

The second panel shows a similar pattern for the gender hourly wage gap. The estimated effect of pay transparency on women’s weekly earnings relative to men’s becomes positive around the implementation period and is statistically significant one year after the policy takes effect. However, the effect gradually declines toward zero beginning in the second post-treatment year, suggesting that the reduction in the gender hourly wage gap is primarily a short-run effect. Overall, the event-study estimates are consistent with the DiD results, suggesting that Colorado’s pay transparency policy reduced both the gender earnings gap and the gender wage gap, but these effects are confined to the short run.

Overall, these findings are consistent with the interpretation that improved access to compensation information about outside opportunities helps women achieve better relative compensation outcomes. Moreover, unlike horizontal pay transparency, which may narrow gender disparities primarily by slowing men’s wage growth while generating only limited gains for women, cross-firm pay transparency appears to reduce gender earnings and wage gaps by improving women’s compensation without reducing men’s compensation. This suggests that workers can obtain genuine compensation gains from access to information about outside opportunities, allowing the policy to achieve its intended distributional objective while avoiding wage compression driven by greater employer market power (Cullen and Pakzad-Hurson, 2023).

5.3 Effects of Pay Transparency Among Younger Workers

It is also important to examine whether Colorado’s pay transparency policy affected younger workers, defined as individuals aged 25 to 44, and to compare these effects with those for mid- to late-career workers. Younger workers entered the labor market more recently and tend to experience more frequent job turnover, which may provide them with more up-to-date information about outside wage opportunities and reduce the additional value of compensation information disclosed through pay transparency. Comparing the effects across age groups therefore provides a useful test of whether the benefits of pay transparency are concentrated among workers who are more likely to face information frictions about outside labor market opportunities.

Table 4 examines the effects of Colorado’s pay transparency policy on earnings outcomes among workers aged 25–44. The first two columns show that the policy had limited effects on weekly earnings and hourly wages for this younger group. The estimated effects are 0.2% on weekly earnings and 1.1% on hourly wage, respectively, and are both statistically insignificant and economically

small.

The last two columns examine the effects on the gender earnings gap and the gender wage gap, respectively. The estimated coefficient for the gender earnings gap suggests that women’s weekly earnings increased by approximately 2% relative to men’s following the policy. Although the estimate is not statistically significant, its magnitude indicates a modest improvement in relative earnings. In addition, the estimated effect on the gender wage gap is close to zero and statistically insignificant, providing little evidence that the policy affected gender differences in hourly wages among younger workers. This pattern is consistent with Figure 5, which shows that the gender wage gap is relatively small among younger workers compared with mid- to late-career workers. As a result, there may be less scope for the policy to reduce the gender wage gap among individuals aged 25–44.

Taken together, these findings suggest that pay transparency has limited effects on earnings outcomes among younger workers. These results are consistent with the hypothesis that younger workers already possess relatively up-to-date information about outside wage opportunities and therefore benefit less from the additional compensation information disclosed through pay transparency. More broadly, the comparison across age groups suggests that the effects of pay transparency are concentrated among workers who are more likely to face information frictions about outside labor market opportunities.

5.4 Heterogeneous Effects by Gender and Education

The previous sections show that Colorado’s pay transparency law increased wages and improved labor market outcomes among mid- to late-career workers. This section examines whether these gains differ across demographic and skill groups by analyzing heterogeneous effects by gender and education.

Given the gender differences documented above, I further examine whether the effects of pay transparency on earnings and wages differ between men and women. Such heterogeneity may arise from gender differences in labor market outcomes, job-search behavior, and wage bargaining (Bertrand et al., 2010; Blau and Kahn, 2017; Le Barbanchon et al., 2021; Roussille, 2024). These differences may influence how workers respond to newly available information about outside wage opportunities. If women face greater information frictions or weaker bargaining positions, pay transparency may generate larger gains for women, particularly in earnings and wages.

I also examine heterogeneity by education. Highly educated workers may benefit more from pay transparency because they face broader outside opportunities and greater wage dispersion, increasing the value of wage information for job search and bargaining. On the other hand, they may already have better access to information about salaries and outside opportunities, making detailed pay disclosures potentially more valuable for less-educated workers. The relationship between education and the effects of pay transparency is therefore theoretically ambiguous. Moreover, education is an important determinant of gender wage inequality (Faberman et al., 2026), so heterogeneity by education also provides insight into whether pay transparency affects gender wage disparities differently across skill groups.

Table 5 reports DiD estimates of the heterogeneous effects of Colorado’s pay transparency policy on mid- to late-career individuals by gender and education level. I define the low-education group as individuals with at most a high school degree, and the high-education group as individuals with at least some college education.

Columns (1) and (2) present the results by gender. Panel A shows that pay transparency has a small and statistically insignificant positive effect on weekly earnings among men, with an estimated increase of 1.1%. In contrast, the policy significantly increases weekly earnings among women by 8.2%. Panel B shows a similar pattern for hourly wages. The estimated effect on men’s hourly wages is positive, at 1.9%, but statistically insignificant, while the effect on women’s hourly wages is positive and statistically significant, at 5.7%. These results are consistent with the findings on the gender earnings gap and gender wage gap, indicating that pay transparency has only limited effects on men’s earnings and wages, whereas the gains for women are significant. Overall, the results suggest that women benefit more from the reduction in compensation information frictions than men. These heterogeneous effects are consistent with the gender gap results presented in the previous section. In particular, they suggest that any reduction in gender disparities is driven primarily by improvements in women’s earnings and wages rather than declines in men’s compensation.

Figure 7 presents the corresponding DiD event-study estimates of the heterogeneous effects. For women, the estimated effect on weekly earnings becomes positive after the policy implementation and increases over time. Beginning in the second post-policy year, the estimated effects become statistically significant. A similar pattern appears for women’s hourly wages. Although the estimate around 2020 is somewhat noisy, the post-policy estimates show an upward pattern, and the effects become statistically significant in the third and fourth post-policy years. These results suggest that pay transparency increased both weekly earnings and hourly wages among women, indicating that women benefited more from the disclosure of wage information.

For men, the event-study estimates show a different pattern. The estimated effects on both weekly earnings and hourly wages are negative in the first post-policy year, but these negative effects dissipate in later years. The short-run decline in men’s wage outcomes may be consistent with an initial wage-compression response, similar to mechanisms emphasized in the horizontal pay transparency literature. However, this decline does not persist. Beginning in the third post-policy year, the estimated effects of pay transparency on men’s weekly earnings and hourly wages become small and statistically insignificant.

Taken together, the event-study results suggest that the effects of cross-firm pay transparency vary over the post-policy period. In the early stage of implementation, the pattern resembles the effect of horizontal pay transparency: the policy has limited immediate effects on women’s wages and is associated with a temporary decline in men’s wage outcomes. Over time, however, the effects on women’s weekly earnings and hourly wages display an upward trend and become statistically significant, while the negative effects among men gradually disappear, and the effects become limited. This pattern is consistent with the interpretation that workers gradually learn about outside options and use this information to improve their bargaining positions. It is also consistent with the

argument in Arnold et al. (2025) that cross-firm pay transparency makes labor markets gradually more competitive by intensifying competition for workers across firms.

Columns (3) and (4) of Table 5 report the heterogeneous effects of pay transparency by education among mid- to late-career workers. Panels A and B show that pay transparency significantly increased weekly earnings and hourly wages among highly educated workers by 6.7% and 5.0%, respectively. In contrast, the estimated effects on weekly earnings and hourly wages are limited among less-educated workers. These findings suggest that the benefits of pay transparency are concentrated among more educated workers. One possible explanation is that highly educated workers may be better positioned to use wage information about outside options in job search, labor supply, or wage bargaining decisions. In addition, highly educated workers may have broader outside options and face a more dispersed distribution of potential wages across firms and jobs. As a result, compensation information may be more valuable for this group.

Figure 8 presents the corresponding DiD event-study estimates. The results are consistent with the DiD estimates. For highly educated individuals, the post-policy estimates are generally positive across employment, main-job hours, weekly earnings, and hourly wages. The positive effects are especially clear for employment and wage outcomes, where the estimates become larger in later post-policy years. In contrast, the estimates for the low-education group are smaller, less precise, and do not display a clear positive post-policy pattern.

Moreover, Table 6 reports heterogeneous effects of pay transparency on the gender earnings gap and the gender wage gap by education level. The first two columns present results for the gender earnings gap. Among low-educated workers, pay transparency increases women’s weekly earnings relative to men’s by 3.0%, although the estimate is not statistically significant. The estimated effect is economically non-negligible but imprecisely estimated. In contrast, among high-educated workers, pay transparency significantly increases women’s weekly earnings relative to men’s by 8.8%. The last two columns report results for the gender wage gap. Among low-educated workers, the estimated effect is positive but statistically insignificant, implying a 4.3% increase in women’s hourly wages relative to men’s. By contrast, among high-educated workers, pay transparency significantly reduces the gender wage gap by 6.2%.

Furthermore, Figure 9 presents the corresponding event-study estimates, which are consistent with the results reported in Table 6. The event-study estimates further show that pay transparency reduced both the gender earnings gap and the gender wage gap among high-educated workers only in the short run, consistent with the main event-study findings.

I examine heterogeneity by marital status and by whether individuals have children in the household. Table A2 in Appendix B.1 suggests that the wage gains from Colorado’s pay transparency policy are larger among married workers and workers with children.

6 Factors Shaping the Wage Effects of Pay Transparency

The wage effects of pay transparency may depend on both how workers respond to improved wage information and the labor market environments in which they work. This section examines two factors that may shape these effects: workers’ job mobility and occupation.

6.1 Wage Effects of Pay Transparency by Job Mobility

Based on the theoretical framework, when individuals receive information about outside options and update their beliefs about the labor market, they may have stronger incentives to change jobs (Jäger et al. (2024)). Previous studies provide evidence that job mobility and job search decisions affect the wage (Topel and Ward (1992); Moscarini and Postel-Vinay (2016, 2018)). Also, Faberman et al. (2026) demonstrate the contribution of job turnover to the gender wage gap. Hence, the effects of updated wage information may differ between job changers and job stayers. Job changers may use wage information to identify better outside opportunities, while job stayers may use the same information to adjust labor supply or improve their bargaining position within their current jobs. Therefore, this section examines whether Colorado’s pay transparency policy increases job mobility among mid- to late-career individuals and whether the effects of the policy differ between job changers and job stayers.

6.1.1 Heterogeneous Effects on Wage by Job Mobility Status

This section examines whether pay transparency affects job changers and job stayers differently. Following Feng (2024) and Faberman et al. (2026), I define job changers as workers who report changing employers at least once during the CPS survey period, with all other workers classified as job stayers. Because employer-change information contains substantial missing values in the CPS (Fujita et al., 2024), I also use a broader definition that classifies workers as job changers if they change either employers or industries during the survey period.⁷

Table 7 reports heterogeneous effects of pay transparency by job mobility status. Columns (1) and (2) use the employer-change definition, while Columns (3) and (4) use the broader definition that also includes industry changes.

Using the employer-change definition, pay transparency increases hourly wages by 8.5% among job changers and 3.5% among job stayers. Although the estimated hourly wage effect for job changers is not statistically significant, its magnitude is substantially larger than that for job stayers. At the same time, weekly earnings decline by 7.5% among job changers but increase by 5.7% among job stayers. Combined with the evidence on working hours of the main job reported in Table A4 in Appendix C.1, which shows that job changers reduce their working hours while job stayers increase

⁷The increase in missing values is largely due to a 2007 revision to CPS interviewing procedures. After the revision, interviewers could no longer rely on a respondent’s previous survey responses when interviewing another household member without the respondent’s permission. Because employer changes are identified using dependent interviewing of occupation and industry information, this change substantially increased missing observations for the employer-change measure (Fujita et al., 2024).

theirs following the introduction of pay transparency, these results suggest that the lower weekly earnings among job changers primarily reflect fewer hours worked rather than lower hourly wages.

Using the broader definition of job mobility yields similar conclusions. Pay transparency increases hourly wages by 6.2% among job changers and 3.4% among job stayers, while weekly earnings increase by 4.0% and 5.2%, respectively. The estimated hourly wage effect for job changers remains economically larger, while the positive wage effects for job stayers remain statistically significant, suggesting that the findings are robust to alternative definitions of job mobility.⁸

Overall, the results suggest that job mobility is an important dimension through which cross-firm pay transparency affects wage outcomes among mid- to late-career workers. While pay transparency raises hourly wages for both job changers and job stayers, with a larger point estimate among job changers. At the same time, the positive wage effects among job stayers indicate that the benefits of pay transparency extend beyond workers who actively change jobs, consistent with stronger within-job bargaining or increased employer competition (Arnold et al., 2025).

6.1.2 Heterogeneous Effects on the Gender Wage Gap by Job Mobility Status

The heterogeneous wage effects documented in the previous section raise the question of whether pay transparency also affects the gender wage gap differently for job changers and job stayers. Table 9 examines the effect of pay transparency on the gender wage gap among job changers and job stayers.

The results show that, based on both job-change definitions, the reduction in the gender wage gap is substantially larger among job changers than among job stayers. Among job changers, the policy reduces the gender wage gap by more than 10%, whereas the corresponding reduction among job stayers is much smaller, at around 3%. Combined with the earlier evidence that women experience larger wage gains from pay transparency, these findings suggest that the overall narrowing of the gender wage gap largely reflects greater wage gains for women who change jobs than for their male counterparts.

These findings are broadly consistent with Feng (2024), who studies workers aged 25–64 and finds that Colorado’s pay transparency policy reduces the gender wage gap primarily through job changers, with no significant effect among job stayers. My results suggest that this mechanism is also present among mid- to late-career workers aged 45–64. In particular, the larger reduction in the gender wage gap among job changers indicates that job mobility is an important channel through which cross-firm pay transparency improves women’s relative wages.

However, my results differ from Feng (2024) in that I also find a statistically significant reduction in the gender wage gap among job stayers, although the magnitude is smaller than that among job changers. This difference suggests that, for mid- to late-career workers, pay transparency may operate not only through job mobility but also through within-job wage adjustments. In particular, women

⁸One potential concern is that these heterogeneous effects reflect differences in worker composition rather than job mobility itself. Appendix C.2 Table A5 compares the characteristics of job changers and job stayers and shows that the two groups are broadly similar in observed demographic characteristics, suggesting that compositional differences are unlikely to explain the heterogeneous wage effects.

who stay with their current employers may use information about outside wage opportunities to improve their bargaining position, or employers may raise wages in response to increased competition generated by more transparent outside options. Although the estimated effect is smaller among job stayers, they account for the vast majority of workers. Consequently, even modest improvements in the relative wages of women who remain with their employers may make an important contribution to the overall reduction in the gender wage gap.

Overall, the findings suggest that job mobility is an important channel through which cross-firm pay transparency narrows the gender wage gap among mid- to late-career workers. By reducing information frictions about outside wage opportunities, pay transparency appears to be particularly beneficial for women who change jobs. At the same time, women who remain with their current employers also benefit from improved information about outside opportunities.

6.1.3 Effect of Pay Transparency on Job Mobility

The previous analysis compares workers who change jobs with those who remain with their employers. A related question is whether pay transparency itself changes workers' job mobility. To examine this possibility, I estimate the effects of Colorado's pay transparency policy on several measures of job mobility.

Table 10 examines how Colorado's pay transparency policy affected job mobility among mid- to late-career individuals. Column (1) uses an indicator for whether an individual ever changed employers during the CPS survey period because the period-level employer-change variable contains substantial missing values.⁹ The same approach is used for the occupation and industry mobility measures in columns (2) and (3), so these estimates should be interpreted as effects on observed mobility over the CPS survey period rather than precise month-to-month transition rates.

The estimated effect on employer mobility is small (-0.3 percentage points). In contrast, the estimated effects on occupational and industry mobility are uniformly positive. The probability of ever changing occupations and industries increased by 1.1 and 2.3 percentage points, respectively, while the probability of changing occupations and industries in a given survey month increased by 0.9 and 0.8 percentage points. Although these estimates are economically meaningful in several cases, none is statistically significant. The results are robust to using the CPS ORG sample, as shown in Table A6 in Appendix C.3.

These findings are robust to using the CPS ORG sample, as shown in Table A6 in Appendix C.3. Moreover, the results reported in Table A7 in Appendix C.3 provide evidence that pay transparency encourages occupational or industry changes among men but has limited effects among women.

Overall, the results provide little evidence that Colorado's pay transparency policy substantially changed job mobility among mid- to late-career workers but suggest that it encouraged men to change occupations or industries. Taken together, these results show that those who change jobs

⁹This measure does not always precisely identify the timing of employer changes relative to the policy implementation, the resulting measurement error is likely limited because only a small share of individuals are observed around the implementation date.

experience larger wage gains under pay transparency, even though the policy does not substantially increase the overall number of workers changing jobs.

6.1.4 The Effects on Wage Among Younger Workers by Job Mobility Status

I also examine whether pay transparency affects wages differently by job mobility status among younger workers.

Table 11 provides evidence on how Colorado’s pay transparency policy affected the gender wage gap among younger workers. The results show that the policy had limited effects on the gender wage gap for this group. Among both job changers and job stayers, the interaction term between CO $\times$ Post and Female remains small and statistically insignificant, suggesting that the policy did not differentially increase women’s wages relative to men’s wages within either group.

One notable finding is that pay transparency significantly increases hourly wages among younger job changers, while there is no significant wage effect among younger job stayers. The estimated gains among job changers are sizable, at 11.4% based on employer changes and 7.1% based on the broader definition of employer or industry changes. This is the only outcome for which I find a statistically significant positive effect among younger workers. However, the insignificant interactions with gender indicate that these wage gains are not significantly larger for women than for men. Thus, while pay transparency has limited effects on younger workers overall, the results point to sizable wage gains among those who change jobs, without a corresponding reduction in the gender wage gap.

6.2 Effects of Pay Transparency on Hourly Wage by Occupations

Previous studies show that occupation is an important source of wage differences across workers (Groshen, 1991; Autor and Handel, 2013). Occupational differences have also been identified as a leading contributor to the gender wage gap (Blau and Kahn, 2000; Faberman et al., 2026). In addition, occupations differ substantially in their average wage levels, wage dispersion, and age-wage profiles, which may influence how workers benefit from improved information about outside wage opportunities. I therefore examine whether the wage effects of pay transparency vary across occupations and whether these differences are systematically related to occupation characteristics.

6.2.1 Heterogeneous Effects on Hourly Wage by Occupation

Table 12 shows the heterogeneous effects of pay transparency on hourly wages across occupation groups. The results indicate that pay transparency has positive and statistically significant effects for workers in professional, sales, craft or repair, and operators or assemblers occupations. The estimates are also positive for admin/clerical and service occupations, although they are not statistically significant. For technical occupations, the estimated effect is small and statistically insignificant. In contrast, the estimates are negative for residual labor and transportation occupations, but these effects are not statistically significant. The estimate for management occupations is negative and statistically significant. Hence, the effects on wage of pay transparency differ across occupations.

In addition, Figure 10 reports the corresponding DiD event-study estimates separately by occupation group. The results are broadly consistent with the DiD estimates, although the estimates are less precise because the sample size is smaller within each occupation group. Figure 11 further shows the residualized yearly wage trends for mid- to late-career individuals in Colorado and other SHB states by occupation group. These residualized trends also align with the DiD results and show patterns similar to those in the event-study estimates.

Appendix F presents additional evidence on the heterogeneous effects of pay transparency on wages across industries. The results indicate that the wage effects of pay transparency vary across industries, implying that the benefits of wage disclosure depend on industry-specific labor market structures.

6.2.2 Heterogeneous Effects on Hourly Wage by Wage Dispersion and Wage Level

The previous results suggest that the effects of pay transparency differ across occupations. To better understand, I discuss whether they are associated with differences in occupational wage structures. Specifically, I focus on two characteristics: within-occupation wage dispersion and average wage levels.

Figure 12 shows the distribution of log hourly wages among mid- to late-career workers across occupation categories in the pre-policy period. The box plot indicates that both wage levels and wage dispersion differ substantially across occupations.¹⁰ In addition, Figure 13 plots the estimated effects of pay transparency on hourly wages against pre-policy wage dispersion across occupation groups. Although the number of occupation groups is limited, the figure suggests a modest positive association between pre-policy wage dispersion and the estimated wage effects of pay transparency. One possible explanation is that wage postings provide more valuable information in occupations where wages vary more widely across employers, allowing workers to better identify outside opportunities and negotiate higher wages. Nevertheless, the relationship is not perfectly monotonic, indicating that wage dispersion alone cannot fully explain the heterogeneity in wage effects across occupations.

Another related question is whether the effects of pay transparency vary with the average wage level within occupations. Figure 14 plots the estimated effects of pay transparency on hourly wages against the pre-policy average wage level for each occupation group. The figure suggests that the largest positive wage effects are concentrated among occupations with middling average wage levels.

In addition, Table 13 reports DiD estimates of the heterogeneous effects of pay transparency across occupation groups with different average wage levels. The results show that positive effects appear in some high-wage occupations, but most positive estimates are concentrated in occupations with middling wage levels. The effects are more limited in several low-wage occupations.

One possible explanation is that high-wage workers are already well informed of their opportunities. In addition, workers in low-wage occupations may have less bargaining power or fewer outside options, making it more difficult for improved wage information to translate into wage gains. This

¹⁰Table A8 in Appendix D further reports summary statistics on corresponding average wage levels and wage dispersion for each occupation group.

interpretation is also consistent with the education heterogeneity results, which suggest that the benefits of reduced wage information frictions are concentrated among relatively highly-educated workers.

Overall, the results suggest that the wage effects of Colorado’s pay transparency policy vary across occupations, with larger effects generally observed in medium-wage occupations and in some occupations with relatively high wage dispersion. While these findings suggest that occupational wage structures help explain the heterogeneous effects of pay transparency, they also indicate that other occupation-specific labor market conditions likely play an important role.

6.2.3 Wage Growth Occupation

The previous results show that pay transparency significantly reduces the gender wage gap among mid- to late-career individuals but has little effect among younger workers. One possible explanation is that compensation information becomes more valuable after gender differences in wage growth have accumulated over the career. As men generally experience faster wage growth than women, women may benefit more from disclosed wage information when evaluating whether their current pay is below market levels. Here, I focus on this mechanism by examining the heterogeneous effects of pay transparency across occupations with different wage-growth profiles.

Figure 15 shows pre-2021 hourly wage profiles by age and gender across occupation groups. Men earn higher hourly wages than women in nearly all occupations, with the gender wage gap becoming more pronounced at older ages in occupations with steeper age-wage profiles, such as management, professional, and technical occupations. The gap is more moderate in sales, service, administrative and clerical, and craft and repair occupations, and relatively limited in occupations with flatter age-wage profiles, including residual labor, operators and assemblers, and transportation occupations.¹¹ These differences motivate the following analysis of whether pay transparency has stronger effects on hourly wages and the gender wage gap in occupations with steeper age-wage profiles.

Based on this, I classify occupations into three groups based on their wage-growth patterns. The steep wage-growth group consists of management, professional, and technical occupations. The moderate wage-growth group includes sales, administrative and clerical, service, and craft and repair occupations. The flat wage-growth group includes residual labor, operators and assemblers, and transportation occupations.

Table 14 shows the heterogeneous effects of pay transparency on hourly wages among mid- to late-career workers by wage-growth occupation group. The first column shows that, among workers in steep wage-growth occupations, pay transparency is associated with a 2.7% increase in hourly wages. Although this estimate is not statistically significant, its magnitude is nontrivial and suggests that pay transparency may still have economically relevant effects for workers in these occupations. The second column shows that pay transparency significantly increases hourly wages among workers in moderate wage-growth occupations by 4.4%. However, the last column shows that pay transparency limited increases hourly wages among workers in flat wage-growth occupations by 0.5%.

¹¹The estimated pre-2021 age-wage slopes are reported in Appendix D, Table A9 and confirm these patterns.

The results suggest that the benefits of pay transparency vary across occupations with different age-wage profiles. Workers in occupations with flat age-wage profiles experience little wage benefit from pay transparency, whereas workers in occupations with moderate or steep profiles experience larger wage gains. This pattern is consistent with the interpretation that, when wage opportunities change with experience, workers without sufficient outside wage information may overlook the compensation opportunities associated with their accumulated experience. Pay transparency can make these opportunities more visible, increasing the value of wage information in occupations where wages grow more substantially with experience.

Figure 16 shows the average hourly wages of male and female mid- to late-career workers across occupation groups with different wage-growth profiles in Colorado and the control states before and after the implementation of pay transparency. The figure suggests that the gender wage gap narrows more in Colorado than in the control states following the policy, particularly in occupations with steep wage-growth profiles. A smaller reduction is observed in occupations with moderate wage-growth profiles, while the change is limited in occupations with flat wage-growth profiles. These patterns suggest that pay transparency has a stronger effect on narrowing the gender wage gap in occupations with steeper life-cycle wage growth.

Table 15 confirms this pattern. Pay transparency reduces the gender wage gap by 6.8% in steep wage-growth occupations, primarily because women experience larger wage gains, while men’s hourly wages decline only slightly (0.7%). This finding is consistent with earlier results showing that cross-firm pay transparency mainly raises women’s wages without substantially reducing men’s wages. The gender wage gap also declines significantly by 4.6% in moderate wage-growth occupations, whereas the estimated effect is small and statistically insignificant (0.9%) in flat wage-growth occupations. Overall, these results suggest that pay transparency is most effective at narrowing the gender wage gap in occupations where wages grow more steeply over the life cycle.

Overall, the results suggest that occupational wage-growth profiles are an important source of heterogeneity in the effects of pay transparency on the gender wage gap. Occupations with steeper age-wage profiles tend to have larger pre-existing gender wage gaps, leaving greater scope for pay transparency to improve wage bargaining and reduce gender differences in pay. Consistent with this interpretation, the policy generates the largest reduction in the gender wage gap in steep wage-growth occupations, a smaller but still significant reduction in moderate wage-growth occupations, and little effect in flat wage-growth occupations. The accompanying wage estimates further indicate that these reductions are primarily driven by larger wage gains for women, particularly in occupations where life-cycle wage growth is steeper.

7 Effects of Pay Transparency on Employment and Working Hours

I continue by examining how pay transparency affects employment and working hours among mid- to late-career workers, capturing the extensive and intensive margins of labor market activity. Mid- to late-career workers face greater labor market barriers, including age discrimination during

hiring, longer job-search durations, and lower reemployment probabilities after job displacement (Neumark et al., 2019; Brown et al., 2025). They may also have weaker incentives to remain in the labor force because of retirement incentives and shorter remaining work horizons (Maestas and Li, 2006; Blundell et al., 2016). Reducing compensation information frictions may therefore affect their employment and working-hour decisions. Because employment is an equilibrium outcome, its estimated response also reflects employers' posting and hiring decisions.

Table 16 reports DiD estimates of the effects of Colorado's pay transparency policy on employment and conditional working hours in the main job. Columns (1) and (2) show that pay transparency increased the employment rate of mid- to late-career workers by 0.6 and 0.8 percentage points under the two fixed-effects specifications. The estimate from the main specification corresponds to approximately 0.9% of the control-group mean, and both estimates are statistically significant. Columns (3) and (4) show that pay transparency also increased conditional weekly hours worked in the main job by 0.603 and 0.536 hours, respectively, corresponding to about 1.5% of the control-group mean under the main specification. Both estimates are statistically significant and remain similar across specifications. Overall, these findings suggest modest but precisely estimated effects of pay transparency on labor supply among mid- to late-career workers, with increases on both the extensive and intensive margins.

Figure 17 presents the corresponding DiD event-study estimates, using 2019 rather than 2020 as the omitted base year to avoid COVID-19-related disruptions. The pre-policy coefficients for both outcomes fluctuate around zero and provide little evidence of differential pre-trends.

The first panel shows that pay transparency increased employment among mid- to late-career workers immediately after implementation. The estimated effects are statistically significant during the first two post-policy years but decline thereafter and become statistically insignificant in later years, suggesting that the employment effects are concentrated in the short run. The second panel shows that pay transparency also increased conditional working hours in the main job. The estimated effect becomes statistically significant in the second post-policy year before diminishing in later years. Similar to the employment results, the increase in working hours is concentrated in the early post-policy period.

One possible interpretation is that improved wage information increased the expected returns to work, generating a substitution effect that encouraged employed workers to supply more hours.¹² Another possibility is that pay transparency improved job matching by helping workers find jobs with more desirable wage-hours packages, thereby increasing their willingness to remain employed and work longer hours.

To provide additional evidence on labor supply, Table A11 in Appendix E examines labor force participation and conditional hours worked across all jobs. These findings suggest that pay transparency increases overall labor supply and working hours of all jobs among mid- to late-career workers. The corresponding DiD event-study estimates reported in Appendix E, Figure A1 show a

¹²Table A10 in Appendix E reports the effects of pay transparency on main-job working hours using the CPS ORG sample. The results indicate that pay transparency increases main-job working hours and are consistent with the main findings.

similar pattern, with positive effects concentrated in the early post-policy period.

Moreover, Table 17 provides evidence on effect of Colorado’s pay transparency policy on labor supply among younger group (aged 25-44). The results show that the policy has limited effects on employment and conditional working hours for this younger group. All estimated effects are statistically insignificant and small in economic magnitude. Thus, the pay transparency does not appear to have encouraged younger workers to work.

Overall, the evidence suggests that reducing compensation information frictions through pay transparency increased labor supply among mid- to late-career workers on both the extensive and intensive margins. The policy increases employment, labor force participation, and working hours, although the labor supply response is concentrated in the early post-policy years. In contrast, the positive effects on earnings and hourly wages become stronger over time, suggesting that workers adjusted their labor supply relatively quickly while the effects on compensation are more persistent.

8 Mechanisms: Workers’ Beliefs about Job Opportunities

I have argued that a key mechanism through which pay transparency may affect worker outcomes is by improving workers’ information about outside options. Workers’ beliefs about these opportunities are unobserved in the CPS data. In this section, I use the Survey of Consumer Expectations (SCE) Labor Market Survey data that directly elicit workers’ expectations about outside opportunities to examine whether these beliefs changed following the implementation of Colorado’s pay transparency law.

8.1 The SCE Labor Market Survey

The SCE Labor Market Survey, conducted by the Federal Reserve Bank of New York, is a nationally representative survey module that collects detailed information on individuals’ labor market experiences, expectations, and subjective beliefs. A key advantage of the survey is that it provides direct measures of workers’ expectations about labor market opportunities and outside options, information that is typically unavailable in standard labor force surveys. This feature makes the survey particularly useful for examining whether pay transparency affects workers’ expectations about wages, job opportunities, and outside options.

Because the SCE Labor Market Survey has a relatively small sample size, I use all states that had not adopted pay transparency laws at either the state or city level through 2025 as the control group, excluding Alaska. Following the CPS sample definition, I also exclude self-employed individuals and focus on workers aged 45 to 64 between 2015 and 2024. The final sample contains 7,813 observations, including 242 from Colorado and 7,571 from the control states.

I use five questions from the survey to measure three dimensions of workers’ labor market beliefs. The first two questions measure expected earnings associated with outside job opportunities by asking respondents about the expected annual salary of job offers they may receive and the expected annual salary of their best potential offer within the next four months. The third question measures

respondents’ reservation wage, defined as the lowest annual wage they would be willing to accept if offered a job. Finally, two additional questions measure perceived job-finding probabilities by asking employed and non-employed respondents, respectively, about the probability of receiving at least one job offer within the next four months. Together, these measures allow me to examine how pay transparency affects workers’ expectations about outside wage opportunities, reservation wages, and job-finding prospects.

8.2 Results on Workers’ Beliefs

Figures 20–24 present residualized yearly trends in workers’ beliefs about labor market opportunities based on the SCE Labor Market Survey. Because the Colorado sample is relatively small, the Colorado series exhibits greater year-to-year fluctuations than the control states throughout the sample period. The figures should therefore be interpreted as suggestive evidence on the evolution of workers’ beliefs rather than as formal causal estimates.

Figure 20 shows the residualized yearly trends in the expected average annual salary of job offers that mid- to late-career individuals believe they may receive within the next four months. Prior to the implementation of Colorado’s pay transparency law in 2021, the Colorado and control-state series follow broadly similar trends despite greater fluctuations in Colorado. Following the policy, expected offer salaries increase steadily in Colorado, whereas the recovery in the control states is considerably weaker, resulting in a widening gap between the two groups. This pattern suggests that reducing compensation information frictions improves workers’ expectations about the earnings associated with outside job opportunities.

Figure 21 presents the residualized yearly trends in the expected annual salary of the best job offer. The overall pattern closely resembles that in Figure 20. Following the implementation of pay transparency, expected best-offer salaries increase in Colorado relative to the control states, indicating improved expectations about the highest-paying outside opportunities available in the labor market.

Figure 22 presents the residualized yearly trends in reservation wages. Prior to 2021, Colorado and the control states exhibit broadly similar trends. Following the implementation of pay transparency, reservation wages increase steadily in Colorado through 2024, whereas they remain relatively flat in the control states. This pattern is consistent with the hypothesis that reducing compensation information frictions leads workers to revise upward their beliefs about the value of outside job opportunities. As argued by Jäger et al. (2024), workers’ beliefs about outside options are often anchored to their current wages. Because mid- to late-career workers may rely on relatively outdated compensation information, greater pay transparency may help them update these beliefs and increase the minimum compensation they require to accept a new job. Together with the increases in expected offer wages, the rise in reservation wages suggests that pay transparency improves workers’ assessments of outside labor market opportunities.

Figure 23 presents the residualized yearly trends in employed workers’ perceived probability of receiving at least one job offer within the next four months. Following the implementation of pay

transparency, perceived job-finding probabilities increase in Colorado during the first few post-policy years while remaining relatively stable in the control states. However, the Colorado series declines noticeably in 2024 and returns to approximately its pre-policy level. Figure 24 shows a similar pattern for non-employed individuals. In both groups, the perceived probability of receiving a job offer increases temporarily following the policy but weakens by the end of the sample period.

Overall, the SCE evidence suggests that pay transparency improves mid- to late-career workers' beliefs about labor market opportunities. Workers revise upward their expectations about outside wages and increase their reservation wages following the policy. They also revise their perceived odds of finding a job upward, but this occurs only in the short run. These findings are consistent with the view that pay transparency reduces compensation information frictions by improving workers' information about outside opportunities. Better information may enable workers to make more informed decisions when searching for jobs, evaluating offers, and negotiating compensation, providing a plausible mechanism for the wage gains documented in the main analysis.

9 Robustness Check

This section presents robustness checks and investigates the role of the COVID-19 shock in the estimated effects of pay transparency on mid- to late-career workers. For the robustness analysis, I use alternative control groups and examine the effects of statewide pay transparency laws implemented in other states. I then investigate the unusual wage movement observed during the COVID-19 period. As shown in the event-study estimates for hourly wages, Colorado experienced a relative increase in average wages during the pandemic compared with the control states. This section examines potential sources of this temporary divergence and assesses whether the main results remain robust after mitigating the influence of the COVID-19-related noise.

9.1 Robustness Check: Using All States Without Pay Transparency as the Control Group

My main identification strategy uses states that had already implemented salary history bans before 2021 as the control group for Colorado. However, one potential concern is whether these salary-history-ban states provide an appropriate counterfactual for Colorado before the implementation of EPEWA. In particular, the results may depend on the choice of control group. To address this concern, this section uses an alternative control group consisting of all states that did not implement pay transparency laws before 2025, excluding Alaska. This robustness check examines whether the main results remain consistent when the control group is expanded beyond salary-history-ban states.

Table 18 reports the DiD estimates using the alternative control group. The first column shows that pay transparency significantly increases the employment rate by 0.6 percentage points, which is consistent with the main results. The second column shows that pay transparency increases conditional weekly hours worked in the main job by 0.404 hours, and this effect is statistically significant. This finding is also consistent with the main results, although the magnitude is about

0.2 hours smaller than the baseline estimate.

The third and fourth columns show that pay transparency significantly increases both weekly earnings and hourly wages. These effects are also consistent with the main results. Finally, the last column shows that pay transparency significantly reduces the gender wage gap by 6.6 percent. The magnitude of this reduction is larger than the baseline estimate, which shows a 3.7 percent decrease in the gender wage gap.

Overall, the results based on the alternative control group are consistent with the main findings. This suggests that the estimated effects of Colorado's pay transparency policy are not sensitive to the choice of control group.

9.2 Triple-Differences Robustness Check: Isolating Pay Transparency from Salary History Ban

Since Colorado's EPEWA combines pay transparency requirements with a salary history ban, I further implement a triple-differences specification to separate the effect of pay transparency from the effect of salary history bans. The control group includes states that had neither salary history bans nor pay transparency laws before 2025, while the comparison group captures the effect of salary history bans alone. The coefficient on the triple interaction compares the post-2021 change in Colorado with the corresponding change in salary-history-ban states, net of changes in states with neither policy. Therefore, this coefficient captures the additional effect of Colorado's EPEWA beyond the effect of salary history bans. Under the assumption that the effect of salary history bans is comparable across states, this remaining effect can be interpreted as the effect of pay transparency.

The DDD regression is as follows

$$Y_{igm} = \rho_1 PT_{ig} \times SHB_{ig} \times Post_m + \rho_2 SHB_{ig} \times Post_{gm}^{shb} + \rho_3 SHB_{ig} + X'_{igm}\gamma + \lambda M_{sm} + \omega_{ot} + \mu_{jt} + \delta_m + \theta_g + \varepsilon_{igm}, \quad (9.1)$$

where PT_{ig} is the indicator whether individual i in metropolitan g that implement pay transparency (in Colorado). SHB_{ig} is the indicator of the Salary History Ban. $Post_{sm}$ is the indicator of post periods that metropolitan g implement both pay transparency and Salary History Ban, and $Post_{gm}^{shb}$ is the indicator of post periods of Salary History Ban. The coefficient of interest is ρ_1 , which captures the additional effect of Colorado's EPEWA relative to the effect of salary history bans alone.

Additionally, the regression below shows the identification method for identifying the gender wage gap:

$$Y_{igm} = \rho_1^G PT_{ig} \times SHB_{ig} \times Post_m \times Female_i + \rho_2^G SHB_{ig} \times Post_{gm}^{shb} \times Female_i + \rho_3^G PT_{ig} \times SHB_{ig} \times Post_m + \rho_4^G SHB_{ig} \times Post_{gm}^{shb} + \rho_5^G SHB_{ig} \times Female_i + \rho_6^G SHB_{ig} + X'_{igm}\gamma + \lambda M_{sm} + \omega_{ot} + \mu_{jt} + \delta_m + \theta_g + \eta_{fg} + \pi_{fm} + \varepsilon_{igm}, \quad (9.2)$$

where $Female_i$ is an indicator for female workers, and π_{fm} denotes female-by-time fixed effects.

The coefficient of interest is ρ_1^G , which captures the additional effect of Colorado’s EPEWA on female workers relative to male workers, after netting out the gender-specific effect of salary history bans.

Table 19 reports the DDD estimates that separately identify the effects of pay transparency and salary history bans on labor market outcomes among mid- to late-career workers. Consistent with the baseline results, pay transparency significantly increases employment, conditional weekly hours worked, weekly earnings, and hourly wages, with estimated magnitudes that are similar to those reported in the main specifications. In contrast, there is little evidence that salary history bans affect these outcomes.

Table 20 presents the estimates for the gender wage gap. Pay transparency continues to significantly reduce the gender wage gap by approximately 5.1%, consistent with the baseline results. By comparison, the estimated effect of salary history bans is considerably smaller and statistically indistinguishable from zero. Together, these findings suggest that the labor market improvements associated with Colorado’s EPEWA are primarily driven by its pay transparency provisions rather than by the salary history ban.

Overall, the robustness-check results are consistent with the main findings, suggesting that the main findings are driven primarily by the pay transparency component of Colorado’s EPEWA rather than by salary history bans alone.

9.3 Robustness Check: The Pay Transparency in Other States

In this section, I focus on the effects of pay transparency policies in states other than Colorado. Specifically, I examine the effects of the policies in California and Washington, both of which implemented their pay transparency laws in January 2023. Because California and Washington are also SHB states, I use the same group of SHB states as the control group as in the main identification strategy.

Table 21 reports the estimated effects of pay transparency in California and Washington. In contrast to the Colorado results, the estimated effects on employment, conditional weekly hours worked, weekly earnings, and the gender wage gap are all small and statistically insignificant. The estimated effect on hourly wages is positive (1.7%) and economically meaningful, although it is not statistically significant. Figure 18 and Figure 19 provide similar evidence from the event-study analysis. The event-study estimates show little indication of systematic effects on employment, hours, weekly earnings, or the gender wage gap, while the hourly wage estimates are positive in the first post-treatment year but exhibit noticeable noise in the pre-treatment period. Taken together, these results provide little evidence that the pay transparency laws in California and Washington affected labor market outcomes over the available sample period.

Several institutional differences may explain why the estimated effects are weaker than those in Colorado. California’s law requires employers to disclose the pay scale but does not require disclosure of other forms of compensation or benefits, potentially allowing greater flexibility in the composition of compensation. In addition, Washington implemented several major policies around the same time, including a substantial minimum wage increase and the WA Cares Fund, which may independently

affect labor market outcomes and complicate identification of the pay transparency effect. Finally, because both states implemented pay transparency in 2023, the available post-treatment period is relatively short, making it difficult to detect delayed policy effects. The more meaningful labor outcome effects that I estimate for Colorado appear more than two years after the reform. Taken together, these differences leave open the possibility that the more limited reforms in California and Washington may generate meaningful earnings and hours responses over a longer follow-up period.

10 Conclusion

This paper examines how cross-firm pay transparency affects the labor market outcomes of mid- to late-career workers, using Colorado’s Equal Pay for Equal Work Act. This group is particularly relevant because mid- to late-career workers may face greater labor market barriers, including age discrimination, and may benefit from updated information about market compensation given the longer average time since their last job search.

The results show that cross-firm pay transparency increases both weekly earnings and hourly wages among workers aged 45–64. These gains are concentrated primarily among women and highly educated workers, whereas the estimated effects for men are positive but small and statistically insignificant. These findings suggest that the benefits of improved access to compensation information vary substantially across workers. Pay transparency also reduces both the gender earnings gap and the gender wage gap among mid- to late-career workers, although these effects are concentrated in the short run. The narrowing of the gender gap is driven by wage gains among women rather than wage declines among men. This pattern differs from the effects of horizontal pay transparency documented in previous studies, where reductions in gender pay gaps are driven primarily by slower wage growth among men, with limited effects on women’s wages.

I also focus on two factors that may shape the wage effects of pay transparency: job mobility and occupation. Regarding job mobility, I find that pay transparency increases hourly wages and reduces the gender wage gap among both job changers and job stayers, with larger effects among job changers. By contrast, the policy has limited effects on job mobility itself, although the policy modestly increases men’s likelihood of changing occupations and industries, whereas the corresponding effects for women are limited. These findings suggest that improved wage information is particularly valuable when workers change jobs, while it can also benefit workers who remain with their current jobs.

Based on occupational characteristics, wage gains are largest in occupations with middle wage levels and moderate age-wage profiles. The occupation-level estimates also show a positive relationship between wage dispersion and the wage effects of pay transparency, suggesting that workers in occupations with greater wage dispersion tend to benefit more, in terms of wage, from information about available opportunities. Among these characteristics, age-wage profiles are particularly relevant for understanding heterogeneity in the effects on the gender wage gap. The reduction in the gender wage gap is largest in occupations with steep age-wage profiles, followed by occupations with

moderate profiles, while the effects are limited in occupations with relatively flat profiles. This pattern is consistent with pay transparency having greater scope to reduce gender wage inequality in occupations where wage differences accumulate more steeply over workers' careers.

Beyond wages, cross-firm pay transparency also increases employment and working hours among mid- to late-career workers, although both effects are modest and concentrated in the short run. The event-study estimates show that employment and hours increase immediately following the policy but gradually attenuate over time. These findings suggest that improving information about outside opportunities can encourage labor market participation among workers approaching retirement age, but that information provision alone may be insufficient to sustain these effects.

Comparisons across age groups further highlight that the benefits of cross-firm pay transparency are concentrated among mid- to late-career workers. The policy has limited effects on earnings, wages, gender wage gap, and labor supply factors among younger workers, although it modestly increases hourly wages among younger job changers. These differences suggest that reducing compensation information frictions is particularly valuable for workers whose knowledge of outside labor market opportunities is more likely to be outdated.

Descriptive evidence from the SCE Labor Market Survey provides additional support for the proposed mechanisms. Following the introduction of pay transparency, mid- to late-career workers gradually revise upward their expectations about outside-option wages and their reservation wages, whereas their perceived probability of receiving a job offer increases only temporarily. These patterns are consistent with workers updating their beliefs about the value of outside opportunities rather than their chances of obtaining them. They also help reconcile the dynamic treatment effects, with persistent changes in wage expectations corresponding to sustained wage gains and temporary changes in perceived job opportunities paralleling the short-run increases in employment and working hours.

From a policy perspective, the findings suggest that cross-firm pay transparency can improve labor market outcomes and reduce gender inequality among workers who face greater information frictions and labor market barriers. However, the benefits are not evenly distributed. The effects are more limited among workers with lower education and those employed in low-wage or flat-wage-growth occupations, who may have weaker bargaining power or fewer opportunities to use disclosed compensation information effectively. Therefore, while pay transparency can reduce information barriers and improve outcomes for many mid- to late-career workers, especially women, complementary policies may be needed to further improve outcomes for more disadvantaged workers. More broadly, the findings suggest that reducing information frictions alone may have limited effects for workers with fewer attractive outside opportunities, since pay transparency provides information about available opportunities but does not itself expand the set of opportunities available to workers.

This study also raises several questions for future research. Future work could examine how pay transparency affects non-wage compensation, particularly health insurance and retirement benefits, which is especially important for mid- to late-career workers but is not measured in sufficient detail in the CPS. More direct evidence is also needed on how the policy changes workers' wage-bargaining

and job-search behavior. Finally, while this study focuses on worker-side responses, firms may also adjust their hiring, wage-setting, and recruiting practices following the introduction of pay transparency laws. Understanding these demand-side responses, especially toward mid- to late-career workers, remains an important direction for future research.

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11 Tables and Figures

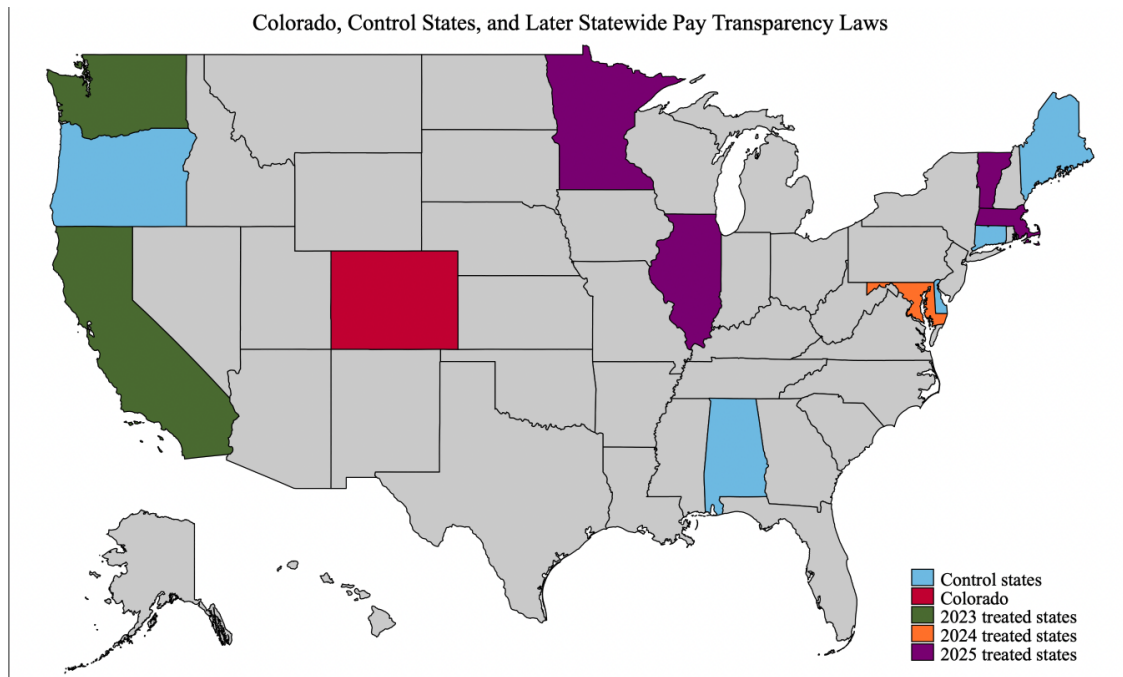


Figure 1: Pay transparency states and control states

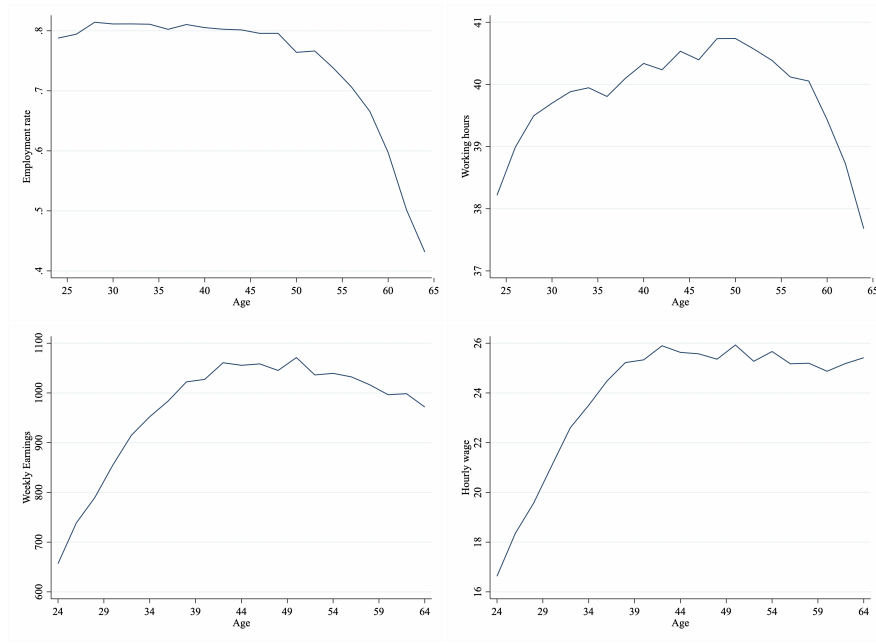


Figure 2: Labor Market Outcomes over the Life Cycle

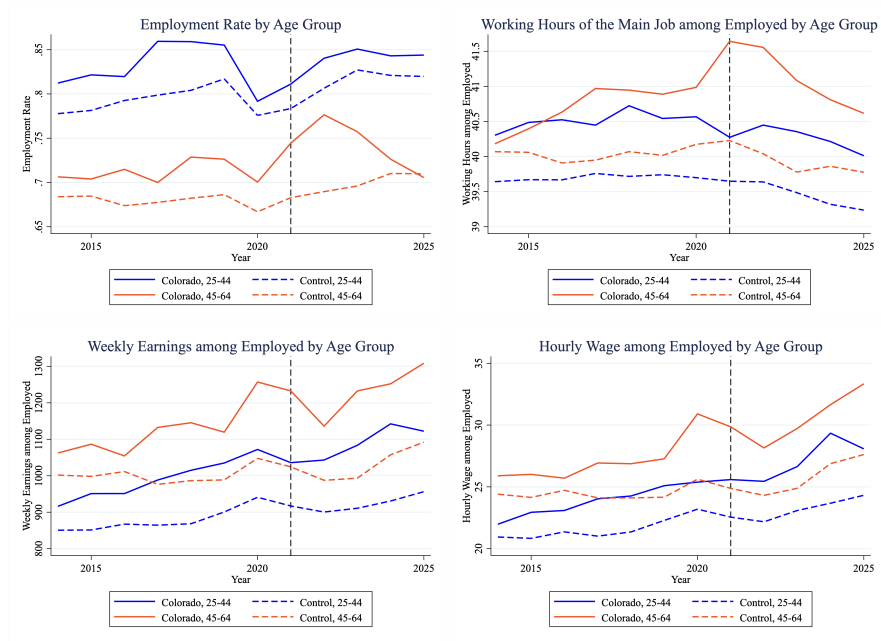


Figure 3: Labor Market Trends by Treatment Status and Age Group

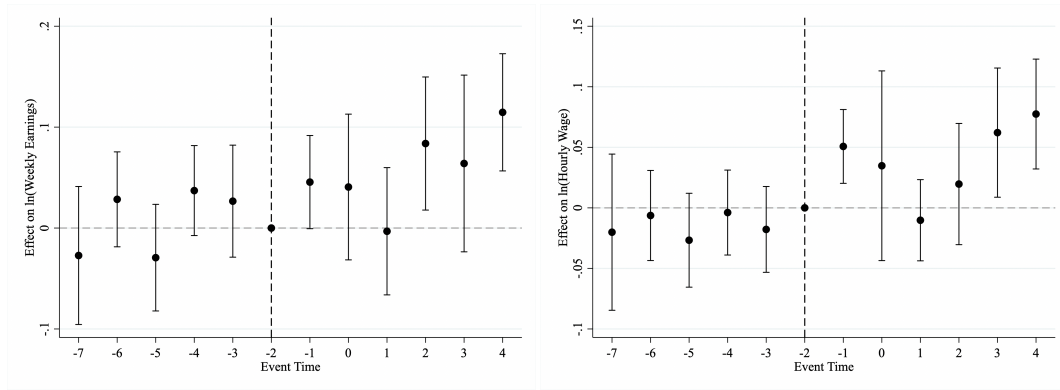


Figure 4: Event Studies: Weekly Earnings and Hourly Wage

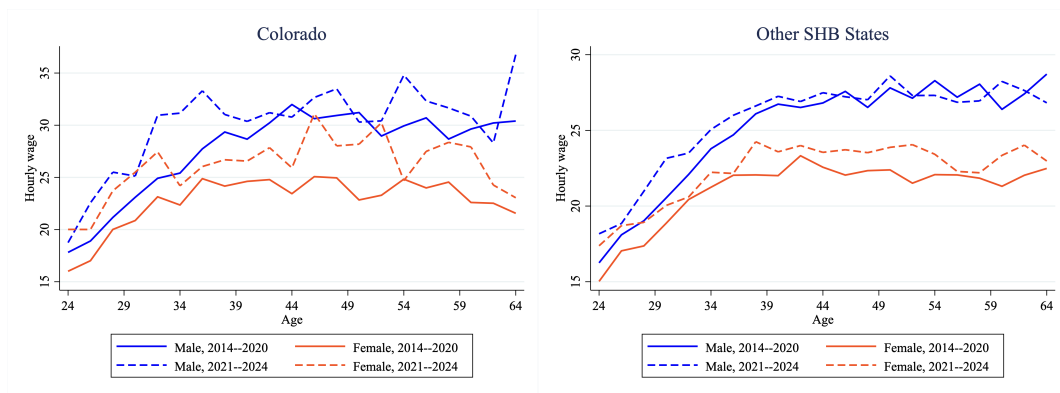


Figure 5: Hourly Wage Profiles by Age and Gender in Colorado and Other SHB States

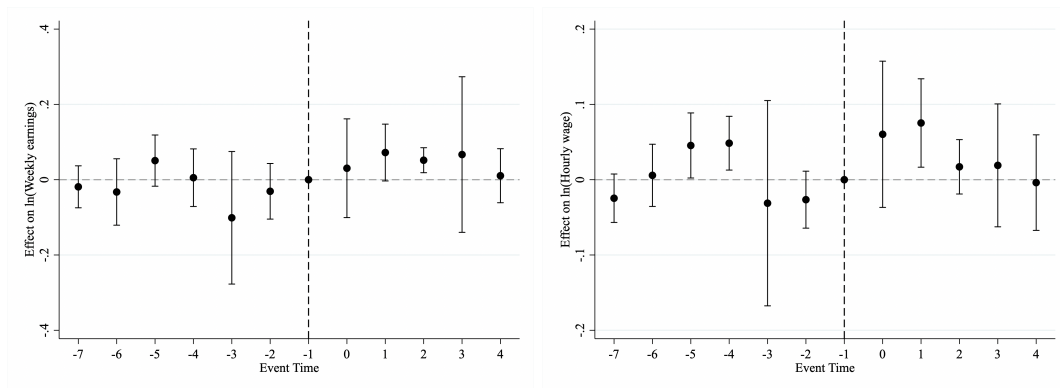


Figure 6: Event Studies: Gender Earning Gap and Gender Wage Gap

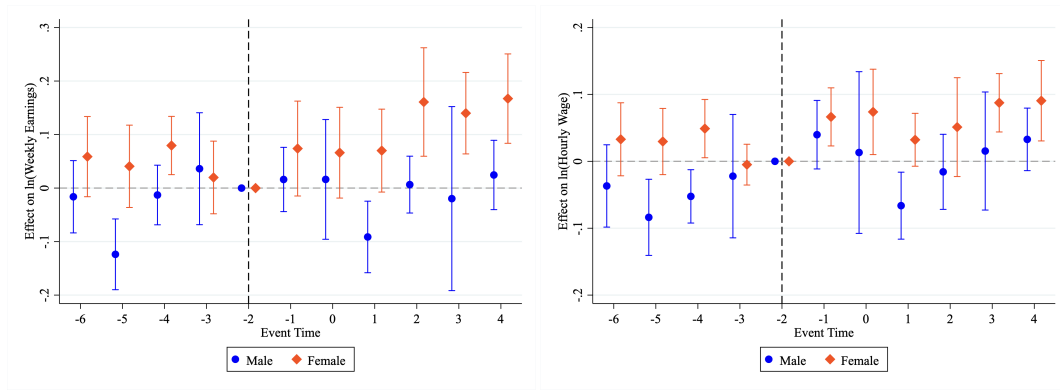


Figure 7: Event Studies: Heterogeneous Effects on Earnings and Wage by Gender

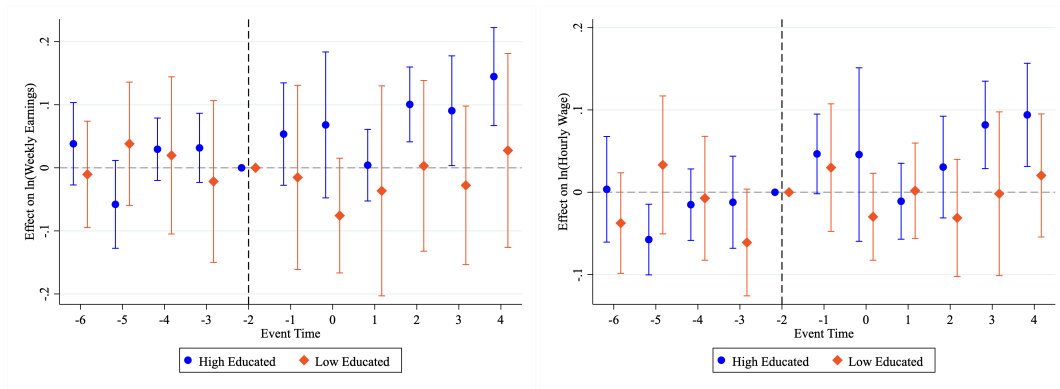


Figure 8: Event Studies: Heterogeneous Effects on Earnings and Wage by Education Level

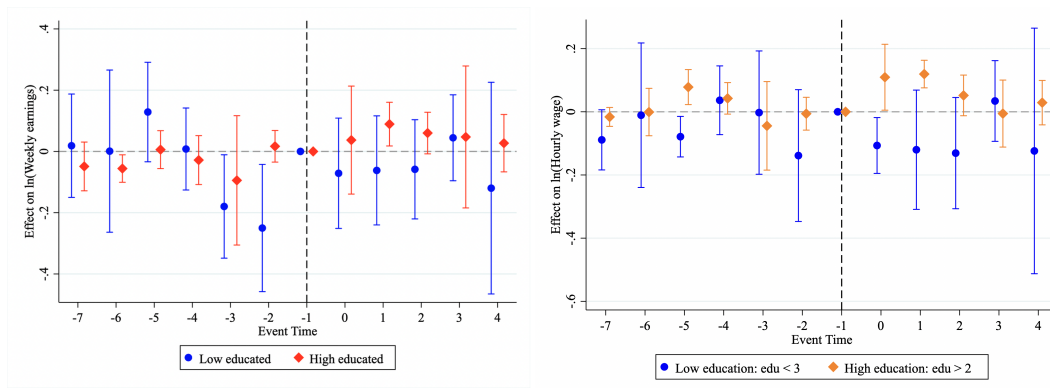


Figure 9: Event Studies: Heterogeneous Effects on Gender Earning/Wage Gap by Education Level

Event-study Effects on Hourly Wage by Occupation Group

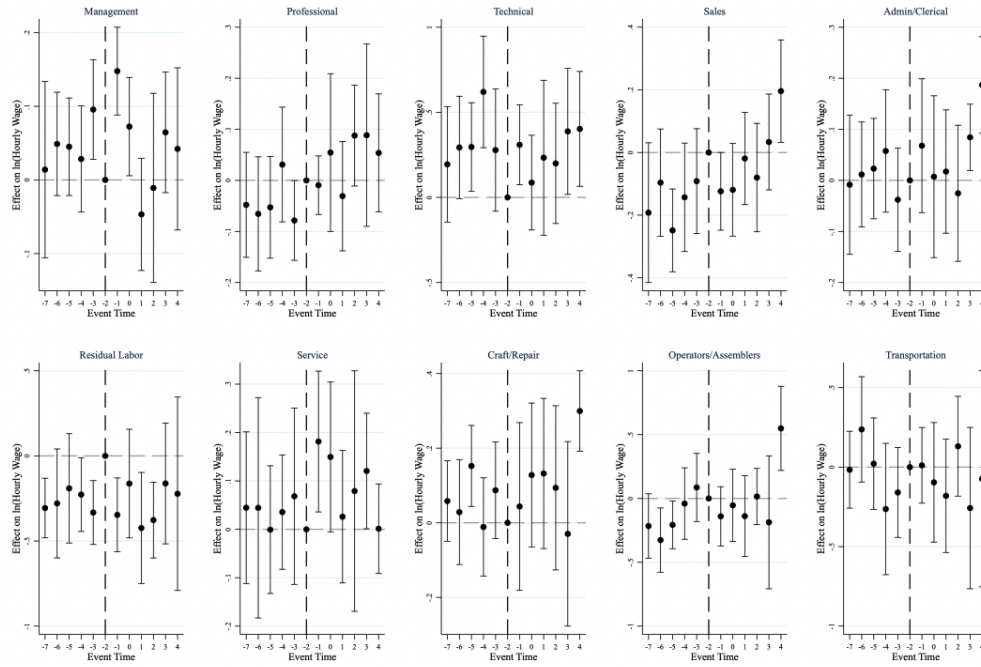
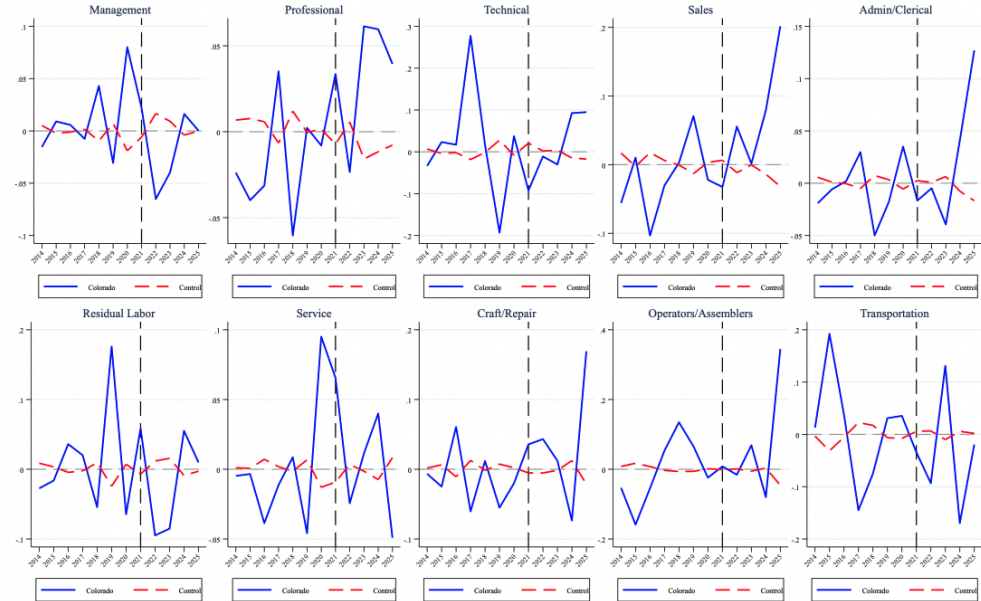


Figure 10: Event Study among Occupations

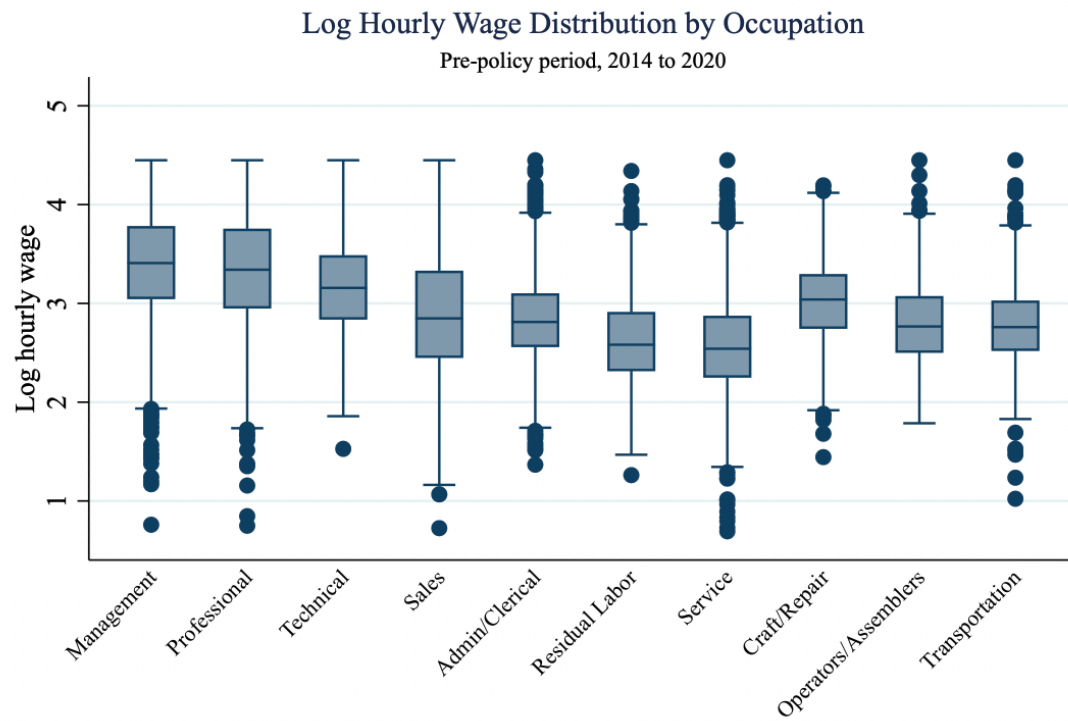
Residualized ln(Hourly Wage) Trends by Occupation Group

Colorado vs Control States



Outcome is residualized using demographic controls, industry-by-year FE, year-by-month FE, and metro FE. Blue solid line = Colorado; red dashed line = control states.

Figure 11: Hourly Wage Trends among Occupations



Sample includes employed workers aged 45--64. Protective service and service occupations are combined into Service.

Figure 12: Log Hourly Wage Distribution by Occupations

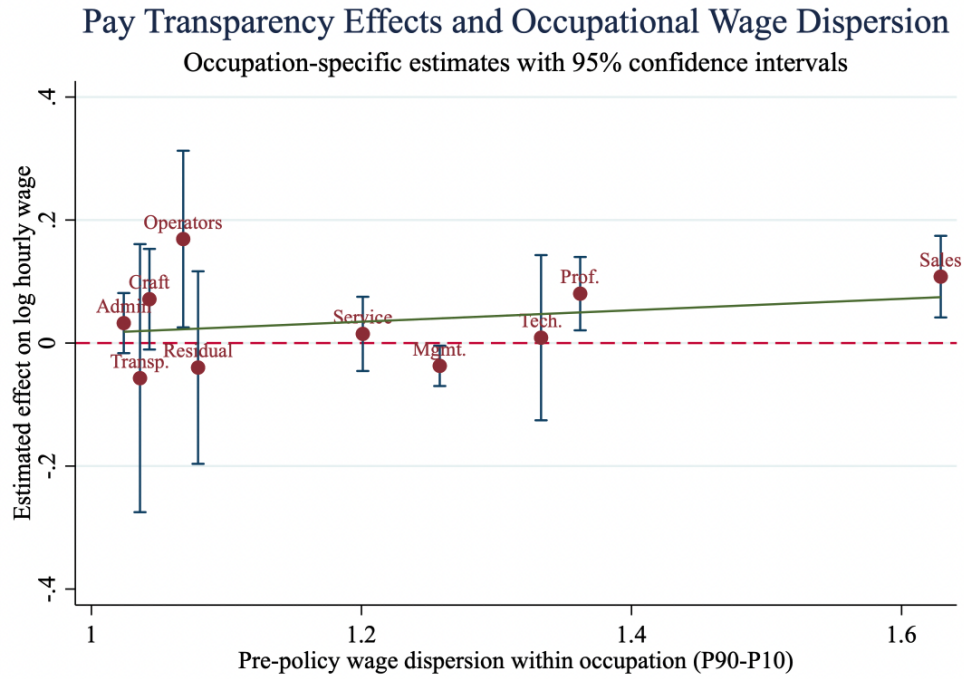


Figure 13: Pay Transparency Effect by Wage Dispersion

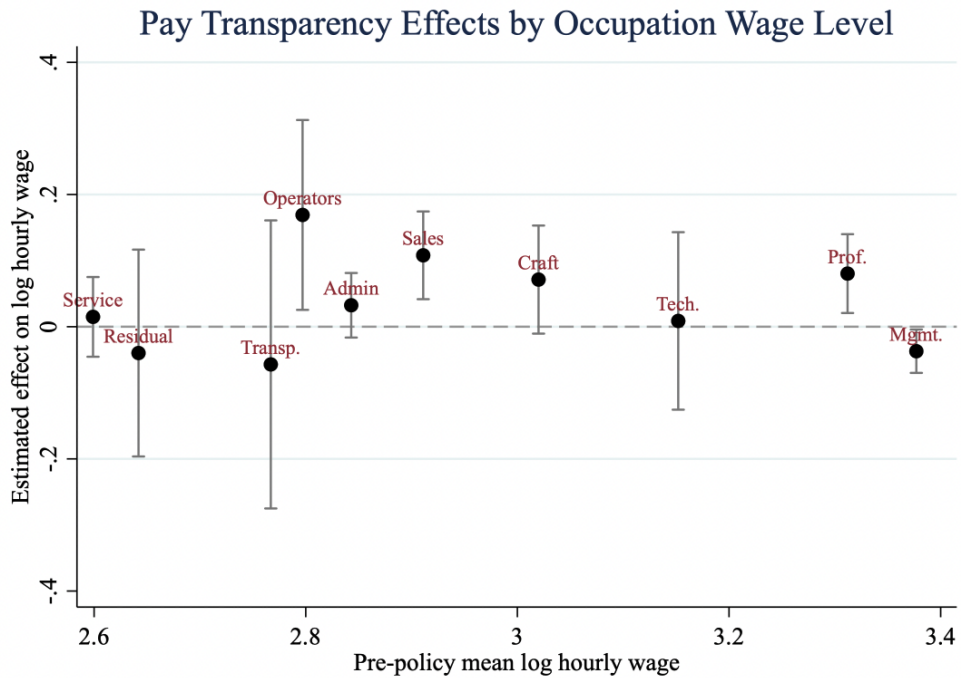


Figure 14: Pay Transparency Effect by Wage Level

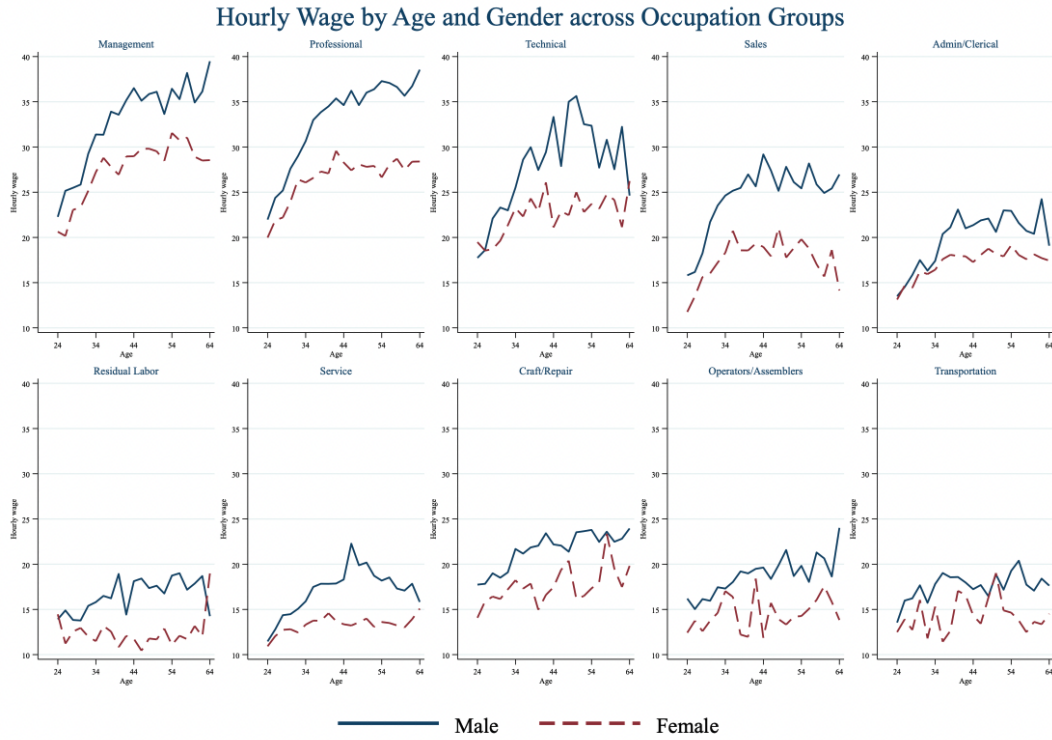


Figure 15: Wage growth on age by occupations Before 2021

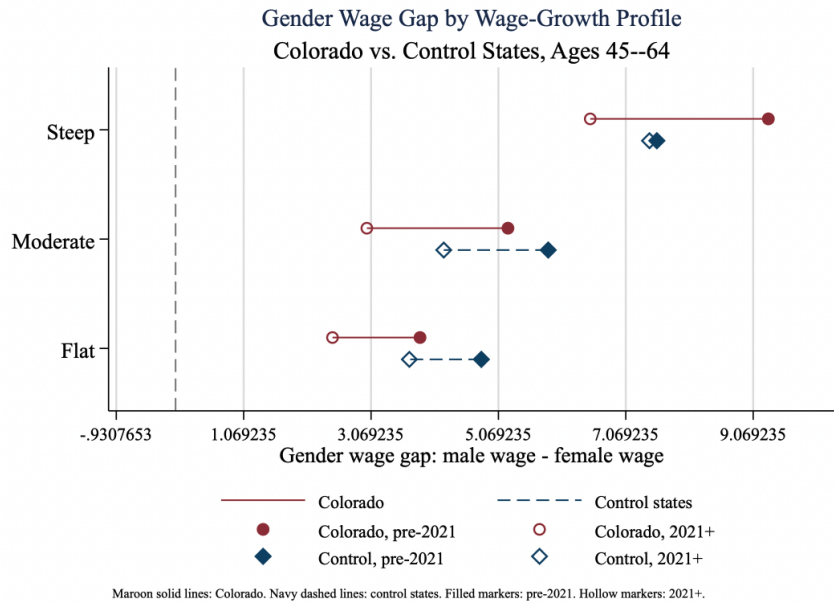


Figure 16: Gender wage gap by wage-growth profile

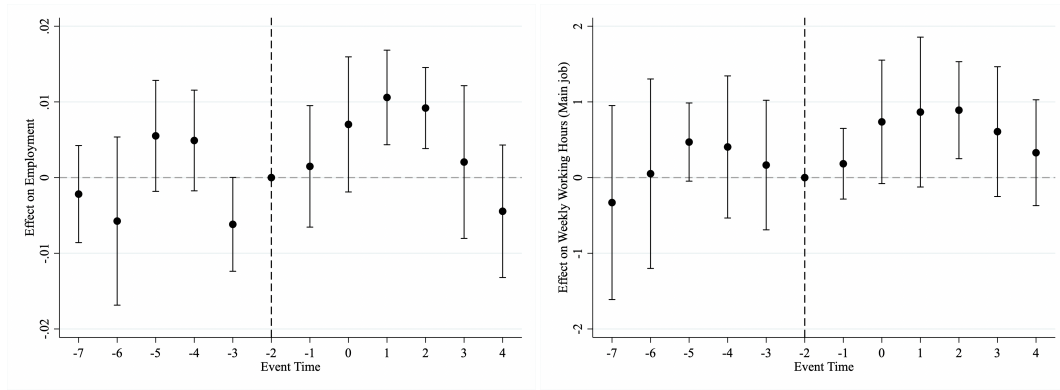


Figure 17: Event Studies: Employment and Working Hours of the Main Job

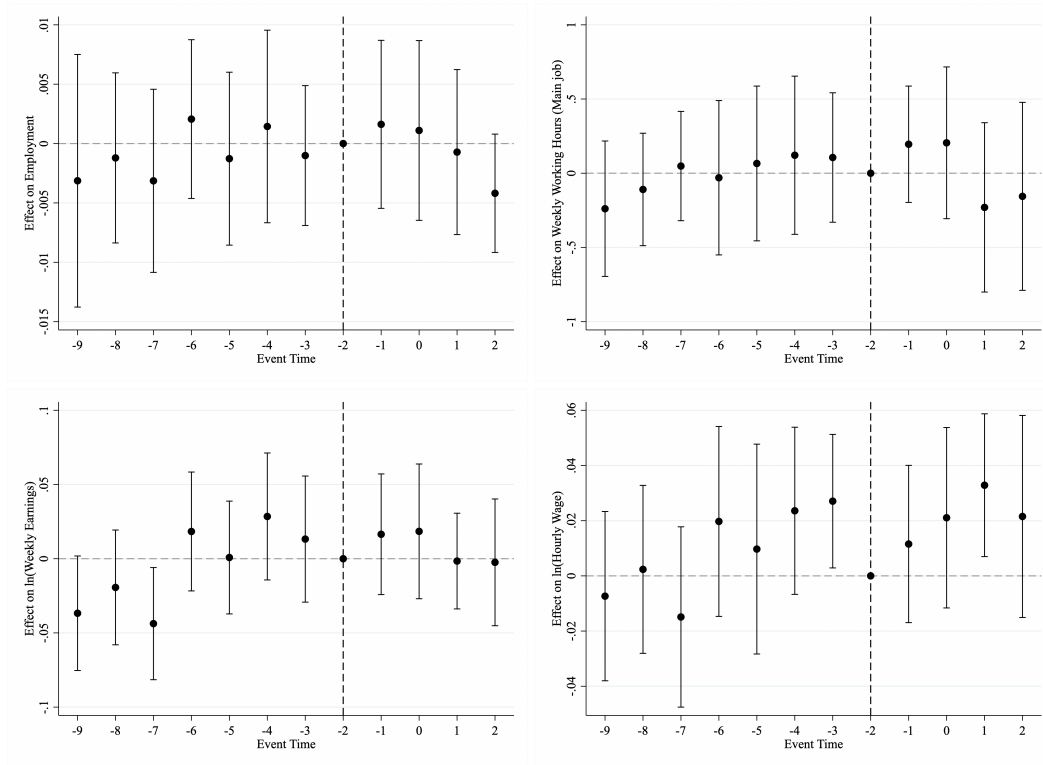


Figure 18: Robustness check: Effects of pay transparency in CO and WA

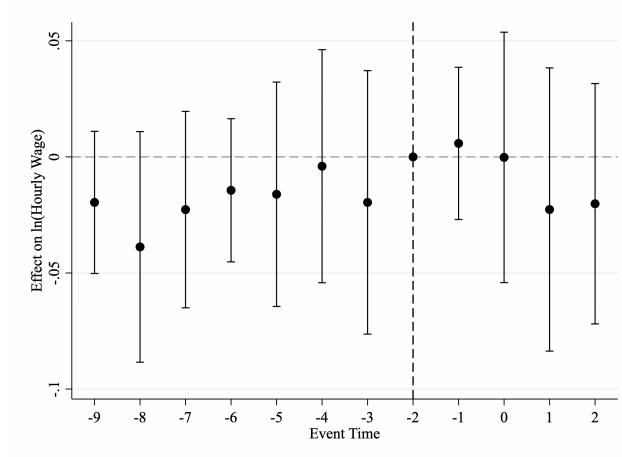


Figure 19: Robustness check: Effects of pay transparency in CO and WA

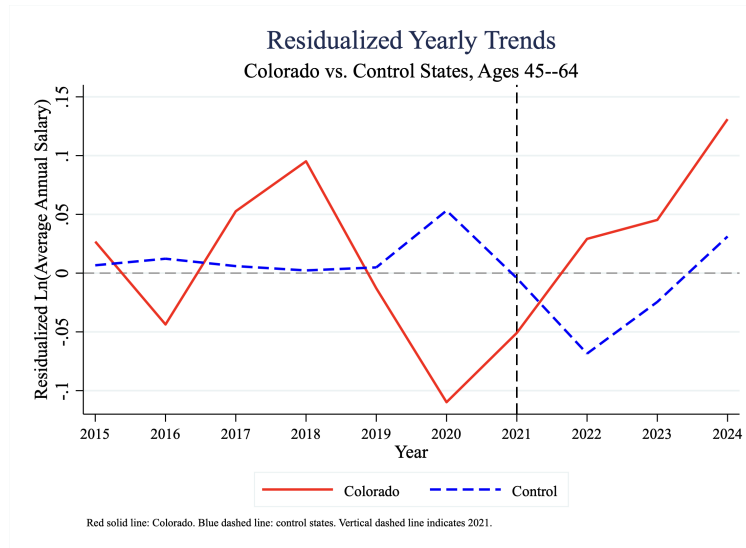


Figure 20: Residualized Average Annual Salary Trends by Year

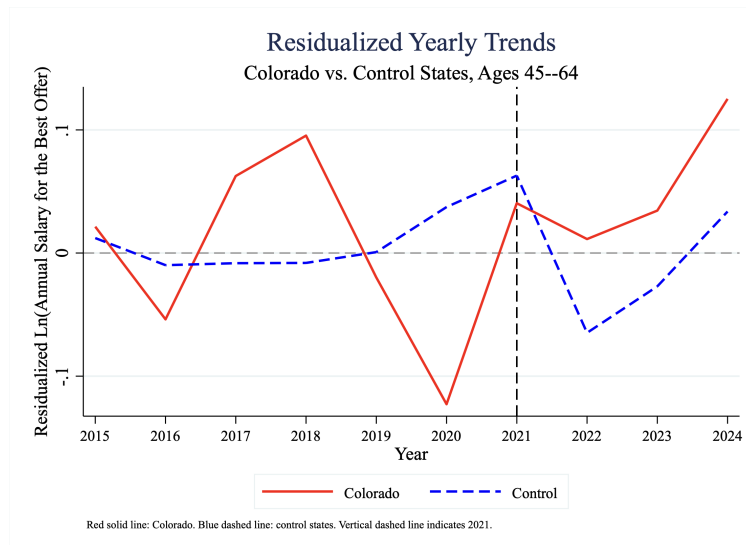


Figure 21: Residualized Best Annual Salary Trends by Year

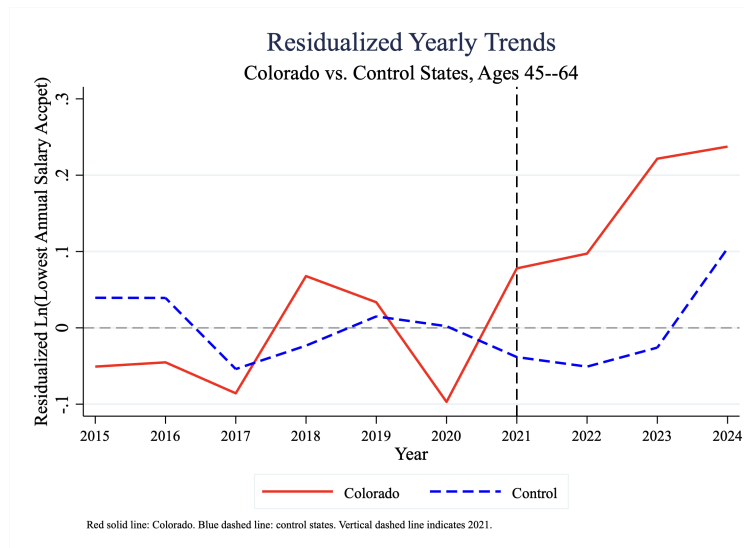


Figure 22: Residualized Reservation Wage Trends by Year

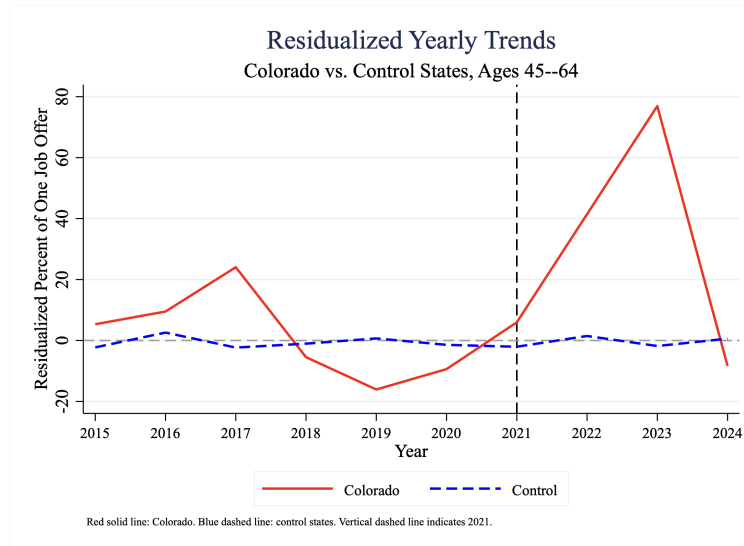


Figure 23: Residualized Percent of Offers Among Employed Trends by Year

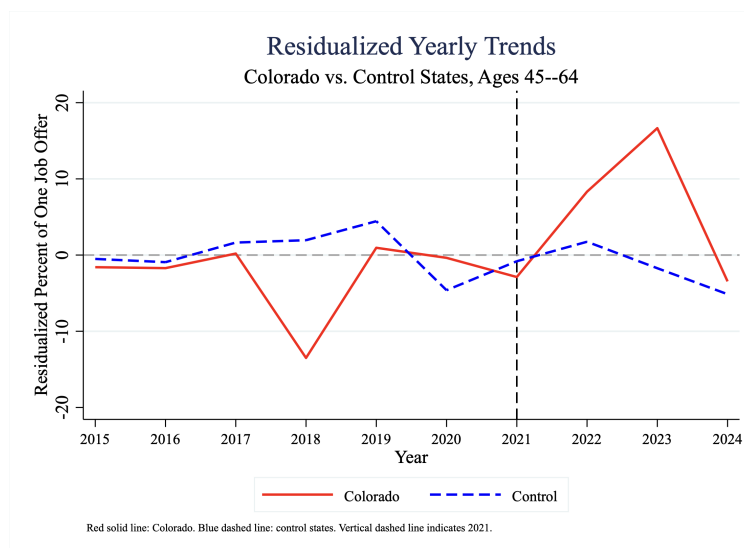


Figure 24: Residualized Percent of Offers Among Not Employed Trends by Year

Table 1: Summary Statistics by Treatment Status

Variable	Colorado		Other SHB States		Difference
	Mean	Std. Dev.	Mean	Std. Dev.	
Age	54.541	5.800	54.814	5.703	-0.273 [†]
Sex (Male=1)	0.431	0.495	0.421	0.494	0.010 [†]
Marriage	0.670	0.470	0.644	0.479	0.026 [†]
Less than high school	0.045	0.206	0.063	0.243	-0.018 [†]
High school	0.209	0.406	0.293	0.455	-0.084 [†]
Some college	0.146	0.353	0.154	0.361	-0.008 [†]
Associate degree	0.101	0.302	0.108	0.311	-0.007 [†]
Bachelor degree	0.301	0.459	0.231	0.421	0.070 [†]
Master or more	0.198	0.399	0.150	0.357	0.048 [†]
White	0.799	0.400	0.781	0.414	0.018 [†]
Black	0.035	0.184	0.128	0.335	-0.093 [†]
Hispanic	0.117	0.322	0.047	0.213	0.070 [†]
Family size	2.618	1.325	2.577	1.279	0.041 [†]
Num of children in HH	1.379	2.012	1.248	1.878	0.131 [†]
Num of own children in HH	0.734	1.023	0.670	0.965	0.064 [†]
Labor force participation	0.746	0.435	0.710	0.454	0.036 [‡]
Employment status	0.722	0.448	0.686	0.464	0.036 [†]
Ever changed employer	0.080	0.271	0.064	0.245	0.016 [†]
Paid hourly	0.102	0.302	0.125	0.330	-0.023 [†]
Public sector	0.199	0.399	0.185	0.389	0.014 [†]
Working hours if employed	41.563	10.161	40.714	9.611	0.849 [†]
Main-job hours if employed	40.847	9.760	40.025	9.042	0.822 [†]
Weekly earnings if employed	1,154.462	692.824	1,012.773	633.321	141.689 [†]
Hourly wage if employed	28.068	15.906	24.869	14.514	3.199 [†]
Observations (main vars)	33,366		185,994		
Observations (employer change)	22,883		120,542		
Observations (job characteristics)	24,079		127,544		
Observations (hours if employed)	23,055		119,073		
Observations (main-job hours)	23,191		119,983		
Observations (weekly earnings)	6,164		32,247		
Observations (hourly wage)	5,928		30,400		

Notes: † indicates significance at the 1 percent level, and ‡ indicates significance at the 5 percent level.

The sample includes individuals aged 45–64. Variables from “Ever changed employer” through “Hourly wage if employed” are summarized among employed workers. Colorado is the treated state, and the other SHB states are the comparison states. Difference is calculated as the Colorado mean minus the mean for the other SHB states.

Table 2: Effects of Pay Transparency on Earnings and Wages (Aged 45–64)

	ln(Weekly earnings)		ln(Hourly wage)	
	(1)	(2)	(3)	(4)
CO $\times$ Post	0.046*** (0.016)	0.042*** (0.014)	0.037*** (0.012)	0.033*** (0.010)
Metropolitan Area FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes
Month FE	No	Yes	No	Yes
Year $\times$ Month FE	Yes	No	Yes	No
Industry $\times$ Year FE	Yes	Yes	Yes	Yes
Occupation $\times$ Year FE	Yes	Yes	Yes	Yes
Observations	38,411	38,411	36,328	36,328
Adjusted R^2	0.358	0.357	0.420	0.419

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates for individuals aged 45–64. The treatment variable, CO $\times$ Post, equals one for individuals in Colorado after the implementation of the Equal Pay for Equal Work Act. Columns (1)–(2) use log weekly earnings as the dependent variable, and Columns (3)–(4) use log hourly wages as the dependent variable. The sample is restricted to employed individuals with valid earnings or wage information. All specifications include demographic controls, industry-by-year fixed effects, occupation-by-year fixed effects, and metropolitan-area fixed effects. Columns (1) and (3) include year-by-month fixed effects, while Columns (2) and (4) include separate year and month fixed effects. Standard errors are clustered at the metropolitan-area level and reported in parentheses.

Table 3: Effects of Pay Transparency on the Gender Earning and Wage Gap (Aged 45–64)

	ln(Weekly earnings)		ln(Hourly wage)	
	(1)	(2)	(3)	(4)
CO $\times$ Post	0.009 (0.018)	0.013 (0.019)	0.019 (0.018)	0.017 (0.016)
CO $\times$ Post $\times$ Female	0.066*** (0.021)	0.067*** (0.021)	0.037** (0.017)	0.035** (0.017)
Industry $\times$ Year FE	Yes	Yes	Yes	Yes
Occupation $\times$ Year FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes
Month FE	No	Yes	No	Yes
Month-Year FE	Yes	No	Yes	No
Metropolitan Area FE	Yes	Yes	Yes	Yes
Female $\times$ Metropolitan Area FE	Yes	Yes	Yes	Yes
Observations	38,411	38,411	36,328	36,328
Adjusted R^2	0.357	0.358	0.420	0.419

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates for individuals aged 45–64. The treatment variable, CO $\times$ Post, equals one for individuals in Colorado after the implementation of the Equal Pay for Equal Work Act. The dependent variable is log hourly wage. The coefficient on CO $\times$ Post captures the effect of the policy on men’s hourly wages, while the coefficient on CO $\times$ Post $\times$ Female captures the marginal effect on women’s hourly wages relative to men’s wages. The sample is restricted to employed individuals with valid hourly wage information. All specifications include demographic controls, industry-by-year fixed effects, occupation-by-year fixed effects, metropolitan-area fixed effects, and female-by-metropolitan-area fixed effects. Column (1) includes year-by-month fixed effects, while Column (2) includes separate year and month fixed effects. Standard errors are clustered at the metropolitan-area level and reported in parentheses.

Table 4: Effects of Pay Transparency on Earnings and Wages (Aged 25-44)

	ln(Weekly earnings)	ln(Hourly wage)	ln(Weekly earnings)	ln(Hourly wage)
CO×Post	0.002 (0.021)	0.011 (0.016)	-0.008 (0.024)	0.011 (0.018)
CO×Post×Female			0.020 (0.022)	-0.000 (0.020)
Industry × Year FE	Yes	Yes	Yes	Yes
Occupation × Year FE	Yes	Yes	Yes	Yes
Month-Year FE	Yes	Yes	Yes	Yes
Metropolitan Area FE	Yes	Yes	Yes	Yes
Observations	43,337	41,093	43,337	41,093
Adjusted R^2	0.355	0.436	0.355	0.436

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Heterogeneous Effects of Pay Transparency by Gender and Education

	Male	Female	Low educated	High educated
<i>Panel A: ln(Weekly earnings)</i>				
CO×Post	0.011 (0.022)	0.082*** (0.020)	-0.019 (0.023)	0.067*** (0.012)
Observations	17,581	20,823	11,081	27,329
Adjusted R^2	0.329	0.325	0.258	0.318
<i>Panel B: ln(Hourly wage)</i>				
CO×Post	0.019 (0.018)	0.057*** (0.013)	0.002 (0.019)	0.050*** (0.012)
Observations	16,611	19,711	10,378	25,949
Adjusted R^2	0.404	0.401	0.306	0.342

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Heterogeneous Effects of Pay Transparency on Gender Earnings and Wage Gaps by Education

	ln(Weekly earnings)		ln(Hourly wage)	
	Low educated	High educated	Low educated	High educated
Colorado $\times$ Post	0.004 (0.022)	0.018 (0.024)	0.029 (0.031)	0.015 (0.023)
Colorado $\times$ Post $\times$ Female	-0.030 (0.056)	0.088*** (0.032)	-0.043 (0.044)	0.062** (0.028)
Observations	11,081	27,327	10,378	25,947
Adjusted R^2	0.263	0.331	0.319	0.365

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: Standard errors are reported in parentheses and clustered at the metropolitan-area level. The dependent variables are log weekly earnings and log hourly wage. The sample is restricted to employed individuals aged 45–64. High educated refers to individuals with education level above high school, while low educated refers to individuals with high school education or below. Controls include age, marital status, education indicators, race and ethnicity indicators, family size, household children, number of children, paid hours, public-sector status, and the unemployment rate.

Table 7: Pay Transparency Effects on $\ln(\text{Hourly Wage})$ by Job Mobility Status (Aged 45–64)

	Ever changed employers	Never changed employers	Ever changed emp. or ind.	Never changed emp. nor ind.
CO×Post	0.085 (0.058)	0.035*** (0.012)	0.062* (0.037)	0.034*** (0.012)
Observations	2,275	32,193	7,575	28,749
Adjusted R^2	0.424	0.420	0.417	0.422

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates of the effect of Colorado’s pay transparency law by job mobility status among employed individuals aged 45–64 based on CPS ORG. Columns (1)–(2) classify workers by whether they changed employers. Columns (3)–(4) classify workers by whether they changed employers or industries.

Table 8: Marginal Pay Transparency Effects on $\ln(\text{Hour Wage})$ by Job Mobility Status (Aged 45–64)

	Use definition of changed employers	Use definition of changed emp. or ind.
CO×Post	0.035*** (0.013)	0.032*** (0.013)
CO×Post× Job changer	0.021 (0.029)	0.025 (0.018)
Observations	34,491	36,328
Adjusted R^2	0.420	0.421

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates of the effect of Colorado’s pay transparency law by job mobility status among employed individuals aged 45–64 based on CPS ORG. The first column classifies workers by whether they changed employers. The second column classifies workers by whether they changed employers or industries.

Table 9: Gender Wage Gap Effects by Job Mobility Status

	Changed employer		Changed employer or industry	
	Changer	Stayer	Changer	Stayer
CO $\times$ Post	-0.012 (0.056)	0.020 (0.017)	0.008 (0.051)	0.021 (0.014)
CO $\times$ Post $\times$ Female	0.169* (0.085)	0.031* (0.018)	0.112** (0.048)	0.027* (0.014)
Observations	2,272	32,193	7,572	28,749
Adjusted R^2	0.412	0.420	0.413	0.422

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates of the effect of Colorado’s pay transparency law on the gender wage gap by job mobility status among employed individuals aged 45–64. The dependent variable is log hourly wage. Columns (1)–(2) classify workers based on whether they changed employers, while Columns (3)–(4) classify workers based on whether they changed employers or industries. The coefficient on CO $\times$ Post captures the effect for men, and the coefficient on CO $\times$ Post $\times$ Female captures the differential effect for women relative to men. All specifications include demographic controls, industry fixed effects, occupation fixed effects, year fixed effects, month fixed effects, metropolitan-area fixed effects, and female-by-metropolitan-area fixed effects. Standard errors are clustered at the metropolitan-area level and reported in parentheses.

Table 10: Pay Transparency Law Effects on Job Mobility

	Ever Changed employer	Ever Changed occupation	Ever Changed industry	Change occupation	Change industry
CO $\times$ Post	-0.003 (0.010)	0.011 (0.020)	0.023 (0.017)	0.009 (0.007)	0.008 (0.006)
Observations	143,425	151,623	151,623	121,427	121,427
Adjusted R^2	0.011	0.045	0.056	0.017	0.017

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Pay Transparency Effects on Gender Wage Gap among Individuals Aged 25–44

	Changed employer		Changed employer or industry	
	Job changers	Job stayers	Job changers	Job stayers
CO×Post	0.114** (0.046)	-0.003 (0.016)	0.071* (0.037)	-0.006 (0.017)
CO×Post × Female	0.015 (0.052)	0.007 (0.026)	-0.023 (0.033)	0.009 (0.021)
Industry × Year FE	Yes	Yes	Yes	Yes
Occupation × Year FE	Yes	Yes	Yes	Yes
Month-Year FE	Yes	Yes	Yes	Yes
Metropolitan Area FE	Yes	Yes	Yes	Yes
Female × Metropolitan Area FE	Yes	Yes	Yes	Yes
Observations	3,272	35,135	9,497	31,593
Adjusted R^2	0.421	0.437	0.424	0.438

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Effects of Pay Transparency on Hourly Wages by Occupation Group

	Mangt.	Prof.	Tech.	Sales	Admin/ Clerical	Residual Labor	Service Repair	Craft/ Assemblers	Operators/ Transp.
Colorado $\times$ Post	-0.037** (0.017)	0.080** (0.030)	0.009 (0.069)	0.108*** (0.034)	0.032 (0.025)	-0.037 (0.074)	0.022 (0.030)	0.071* (0.042)	-0.057 (0.111)
Observations	7,629	8,716	1,265	3,136	5,316	1,242	3,574	2,734	1,326
Adjusted R-squared	0.263	0.250	0.250	0.432	0.205	0.293	0.282	0.154	0.126

Notes: The dependent variable is log hourly wage. Each column reports a separate regression for the corresponding occupation group. Standard errors clustered at the metropolitan-area level are reported in parentheses. The sample includes employed ORG workers aged 45–64. All specifications include demographic controls, industry-by-year fixed effects, year-by-month fixed effects, and metropolitan-area fixed effects. Protective service and service occupations are combined into the Service group. Mangt. denotes management, Prof. denotes professional, Tech. denotes technical, and Transp. denotes transportation. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 13: Heterogeneous effect of pay transparency based on occupation wage level

	High	Median	Low
CO×Post	0.027 (0.019)	0.053*** (0.018)	0.007 (0.025)
Observations	17,663	12,447	6,213
Adjusted R^2	0.250	0.270	0.264

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 14: Heterogeneous effect of pay transparency based on occupation wage growth

	Steep	Moderate	Flat
CO×Post	0.028 (0.020)	0.044** (0.017)	0.005 (0.028)
Observations	17,663	14,824	3,833
Adjusted R^2	0.252	0.319	0.236

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Heterogeneous effect of pay transparency based on occupation wage growth

	Steep	Moderate	Flat
CO×Post	-0.007 (0.026)	0.019 (0.023)	0.006 (0.041)
CO×Post×Female	0.068** (0.025)	0.046** (0.022)	0.009 (0.092)
Observations	17,660	14,824	3,827
Adjusted R^2	0.251	0.318	0.226

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 16: Effects of Pay Transparency on Labor Supply (Aged 45–64)

	Employment		Working hours: main job	
	(1)	(2)	(3)	(4)
CO $\times$ Post	0.006*** (0.002)	0.008*** (0.002)	0.603*** (0.206)	0.536** (0.202)
Metropolitan Area FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes
Month FE	No	Yes	No	Yes
Year $\times$ Month FE	Yes	No	Yes	No
Industry $\times$ Year FE	Yes	Yes	Yes	Yes
Occupation $\times$ Year FE	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No
Occupation FE	No	No	No	No
Observations	219,360	219,360	143,174	143,174
Adjusted R^2	0.871	0.871	0.119	0.119

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates for individuals aged 45–64. The treatment variable, CO $\times$ Post, equals one for individuals in Colorado after the implementation of the Equal Pay for Equal Work Act. Columns (1)–(2) use employment status as the dependent variable. Columns (3)–(4) use usual weekly hours worked in the main job and restrict the sample to employed individuals with positive main-job hours. All specifications include demographic controls and metropolitan-area fixed effects. Columns (1) and (3) include year-by-month fixed effects, while Columns (2) and (4) include separate year and month fixed effects. Standard errors are clustered at the metropolitan-area level and reported in parentheses.

Table 17: Effects of Pay Transparency on Labor Supply (Aged 25–44)

	Employment	Main-job hours
CO $\times$ Post	-0.002 (0.003)	0.035 (0.150)
Industry $\times$ Year FE	Yes	Yes
Occupation $\times$ Year FE	Yes	Yes
Month-Year FE	Yes	Yes
Metropolitan Area FE	Yes	Yes
Observations	212,355	162,227
Adjusted R^2	0.773	0.127

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 18: Robustness check: Alternative Control Group

	Employment	Main-job hours	ln(Weekly earnings)	ln(Hourly wage)	ln(Hourly wage)
CO×Post	0.006*** (0.002)	0.404* (0.202)	0.048*** (0.013)	0.039*** (0.008)	0.006 (0.014)
CO×Post×Female					0.066*** (0.015)
Observations	1,618,921	1,055,906	280,799	266,469	266,465
Adjusted R^2	0.876	0.111	0.344	0.415	0.415

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 19: DDD Robustness check: Earnings and Wage

	Employment	Main-job hours	ln(Weekly earnings)	ln(Hourly wage)
PT×SHB×Post	0.006*** (0.002)	0.438** (0.212)	0.053*** (0.014)	0.044*** (0.009)
SHB×Post	0.001 (0.001)	-0.052 (0.088)	-0.005 (0.007)	-0.004 (0.006)
Observations	1,618,921	1,056,498	280,799	266,469
Adjusted R^2	0.876	0.111	0.344	0.415

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 20: DDD Robustness check: Gender Wage Gap

	ln(Hourly wage)
PT×SHB×Post	0.019 (0.016)
PT×SHB×Post×Female	0.051*** (0.018)
SHB×Post	-0.014* (0.007)
SHB×Post×Female	0.016 (0.011)
Observations	266,469
Adjusted R^2	0.415

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 21: Robustness check: Effects of Pay Transparency Law in CA and WA

	Employment	Main-job hours	ln(Weekly earnings)	ln(Hourly wage)	ln(Hourly wage)
CO×Post	-0.001 (0.002)	-0.077 (0.171)	0.006 (0.013)	0.017 (0.011)	0.016 (0.014)
CO×Post×Female					0.000 (0.015)
Observations	478,621	309,065	82,067	78,201	78,199
Adjusted R^2	0.862	0.107	0.362	0.435	0.435

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A Summary Statistics for the Estimation Sample

Table A1 below presents summary statistics for the full sample. The average age in the sample is approximately 54.8. The labor force participation rate is around 71.5%, and about 69.1% of observations are employed. Among employed observations, around 6.7% report ever changing employers, around 12.1% are paid hourly, and 18.7% work in the public sector. In addition, employed individuals work an average of 40.85 hours per week across all jobs, while average weekly hours on the main job are about 40.16. Based on the ORG supplement, average weekly earnings are 1,035.51 dollars per week, and the average hourly wage is around 25.39 dollars. Both earnings and wage measures are expressed in 2010 dollars, as provided by IPUMS-CPS.

Table A1: Summary Statistics Among Aging Workers

Variable	Obs	Mean	Std. Dev.
Age	219,360	54.772	5.719
Sex (Male=1)	219,360	0.422	0.494
Marriage	219,360	0.648	0.478
Less than high school	219,360	0.060	0.238
High school	219,360	0.280	0.449
Some college	219,360	0.153	0.360
Associate degree	219,360	0.107	0.309
Bachelor degree	219,360	0.242	0.428
Master or more	219,360	0.157	0.364
White	219,360	0.784	0.412
Black	219,360	0.114	0.318
Hispanic	219,360	0.058	0.234
Family size	219,360	2.583	1.286
Num of children in HH	219,360	1.268	1.899
Num of own children in HH	219,360	0.679	0.974
Labor force participation	219,360	0.715	0.451
Employment status	219,360	0.691	0.462
Ever changed employer	143,425	0.067	0.249
Paid hourly	151,623	0.121	0.326
Public sector	151,623	0.187	0.390
Working hours if employed	142,128	40.851	9.707
Main-job hours if employed	143,174	40.159	9.167
Weekly earnings if employed	38,411	1,035.511	645.330
Hourly wage if employed	36,328	25.391	14.797

Notes: The sample includes individuals aged 45–64. Variables from Ever changed employer to Hourly wage are summarized among employed workers.

B More Evidence on the Heterogeneous Effects of Pay Transparency on Earnings and Wage

B.1 Heterogeneous Effects by Marital Status and Presence of Children

Table A2 reports heterogeneous effects of Colorado’s pay transparency policy on weekly earnings and hourly wages by marital status and the presence of children in the household. Among married workers, the policy significantly increased both weekly earnings and hourly wages by 5.2% and 5.9%, respectively. By contrast, the estimated effects for unmarried workers are smaller in magnitude and statistically insignificant. Similarly, workers with children experienced larger earnings gains than those without children. Weekly earnings increased by 6.0% among workers with children, compared with an economically smaller and statistically insignificant increase among those without children. For hourly wages, the estimated effects are positive for both groups but are larger for workers with children.

Overall, the results suggest that the wage effects of Colorado’s pay transparency policy are stronger among married workers and workers with children. One possible explanation is that these groups face higher search costs or greater constraints on job search, making them more likely to benefit from improved information about outside wage opportunities.

Table A2: Heterogeneous Effects of Pay Transparency on Earnings and Wages by Marital Status and Presence of Children

	Married	Unmarried	With children	No children
<i>Panel A: $\ln(\text{Weekly earnings})$</i>				
CO×Post	0.052*** (0.018)	0.033 (0.035)	0.060** (0.024)	0.031 (0.026)
Observations	26,031	12,374	17,747	20,662
Adjusted R^2	0.357	0.341	0.387	0.331
<i>Panel B: $\ln(\text{Hourly wage})$</i>				
CO×Post	0.059*** (0.012)	-0.007 (0.024)	0.043** (0.019)	0.026** (0.013)
Observations	24,726	11,596	16,885	19,441
Adjusted R^2	0.409	0.410	0.436	0.400

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B.2 Heterogeneous Effects of Pay Transparency on Earnings and Wages by Whether Hourly Paid

The hourly wage measure for workers who are not paid hourly is constructed by dividing weekly earnings by usual weekly hours worked at the main job. This raises a concern that the estimated effect of pay transparency on hourly wages may be influenced by the construction of the outcome. To address this concern, I also report results using the raw earnings measures available in the CPS ORG. Specifically, I estimate the effect of pay transparency on weekly earnings among workers who are not paid hourly and on reported hourly wages among workers who are paid hourly. For completeness, I also report both outcomes for each group. These estimates provide additional evidence on whether the effects of pay transparency differ between hourly paid and non-hourly-paid mid- to late-career workers.

The first two columns of Table A3 report the results for workers who are not paid hourly. Pay transparency increased their weekly earnings by 4.3% and their constructed hourly wages by 4.1%, with both estimates statistically significant. The third and fourth columns report the results for hourly paid workers. For this group, the policy increased weekly earnings by 5.3% and reported hourly wages by 2.4%, and both estimates are statistically significant. Overall, these findings are consistent with the main results showing that pay transparency increased both weekly earnings and wage rates among mid- to late-career workers.

Table A3: Effects of Pay Transparency Law by Hourly Pay Status

	Not hourly paid		Hourly paid	
	ln(Weekly earnings)	ln(Hourly wage)	ln(Weekly earnings)	ln(Hourly wage)
CO $\times$ Post	0.043*** (0.017)	0.041*** (0.013)	0.053** (0.022)	0.024* (0.012)
Observations	20,067	19,039	18,341	17,285
Adjusted R^2	0.257	0.284	0.249	0.343

Standard errors clustered at the metropolitan-area level are in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

C Effect of Pay Transparency by Job Mobility Status

C.1 Effect of Pay Transparency Hours Worked by Job Mobility Status

This section provide evidence on the effect of pay transparency on working hours of the main job by job mobility status.

Table A4 examines whether the effects of pay transparency on conditional working hours differ between job changers and job stayers among mid- to late-career individuals. The first two columns define job changers as individuals who ever changed employers during the CPS survey window. Column (1) shows that pay transparency significantly reduced conditional working hours among job changers by 2.694 hours per week. In contrast, column (2) shows that the policy increased conditional working hours among job stayers by 0.805 hours per week.

The last two columns adopt a broader definition of job changers that also includes individuals who ever changed industries during the CPS survey window. Under this alternative definition, pay transparency continued to reduce conditional working hours among job changers, although the estimated effect was smaller in magnitude (0.255 hours per week) and was not statistically significant. By contrast, the estimated effect for job stayers remained positive and statistically significant, with an increase of 0.853 hours per week. Overall, the results indicate that the increase in working hours following pay transparency was concentrated among job stayers, whereas job changers tended to reduce their working hours.

Table A4: Pay Transparency Effects on Hours Worked by Job Mobility Status

	Ever changed employers	Never changed employers	Ever changed emp. or ind.	Never changed emp. nor ind.
<i>Main-job hours</i>				
CO×Post	-2.627** (1.274)	0.525** (0.236)	-0.255 (0.487)	0.598* (0.323)
Observations	2,280	32,305	7,604	28,849
Adjusted R^2	0.181	0.150	0.154	0.149

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates of the effect of Colorado’s pay transparency law by job mobility status among employed individuals aged 45–64 based on CPS ORG. Columns (1)–(2) classify workers by whether they changed employers. Columns (3)–(4) classify workers by whether they changed employers or industries.

C.2 Comparison between Job Changers and Job Stayers

This section examines whether job changers respond differently to the pay transparency policy than job stayers. Table A5 reports summary statistics comparing job changers and job stayers across individual characteristics and labor market outcomes. The table shows that job changers and job stayers are broadly similar in terms of background characteristics. There are no substantial differences between the two groups in demographic characteristics such as age, gender, marital

status, education, race, ethnicity, family size, or the presence of children. However, among employed individuals, job stayers differ from job changers along several labor market dimensions. Job stayers are less likely to be paid hourly, more likely to work in the public sector, work more hours in their main job, and have higher weekly earnings and hourly wages.

Overall, the summary statistics suggest that job changers and job stayers are not substantially different in observable background characteristics, although they differ in some labor market outcomes. This comparison helps interpret the heterogeneous effects by job mobility status by showing that the two groups are broadly comparable in demographic characteristics.

Table A5: Sample Composition by Employer Mobility Status

	Stayer mean	Changer mean	Difference
Age	53.891	53.375	0.516***
Male	0.455	0.488	-0.034***
Married	0.681	0.660	0.022*
Less high school	0.037	0.041	-0.004
High school	0.261	0.230	0.031***
Some college	0.151	0.155	-0.004
Associate degree	0.114	0.112	0.002
Bachelor degree	0.259	0.269	-0.010
Master or more	0.178	0.194	-0.015
Hispanic	0.052	0.041	0.011*
White	0.809	0.811	-0.002
Black	0.099	0.119	-0.020**
Family size	2.658	2.646	0.013
Has child	1.435	1.430	0.004
Number of children	0.770	0.776	-0.007
Hourly paid	0.486	0.508	-0.022*
Public sector	0.193	0.162	0.031***
Main-job hours	40.231	39.258	0.973***
ln(Hourly wage)	3.062	3.034	0.029*
ln(Weekly earnings)	6.717	6.649	0.068***

Difference is defined as stayer mean minus changer mean.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports pre-treatment summary statistics by observed employer mobility status among employed CPS ORG respondents aged 45–64. Stayers are workers with no observed employer change, while changers are workers with an observed employer change. The sample is restricted to employed individuals with non-missing employer-change status before 2021. The last column reports the difference in means between stayers and changers, based on two-sample t -tests.

C.3 More Evidence on Effect of Pay Transparency Job Mobility Status

This section provide evidence on the effect of pay transparency on job mobility status based on CPS ORG sample and the heterogeneous effect of pay transparency on job mobility status by gender.

Table A6 examines the effects of pay transparency on job turnover outcomes using the CPS ORG sample. The results show that Colorado’s pay transparency policy had no statistically significant effect on any of the job mobility measures among mid- to late-career individuals, which is consistent with the results based on the full sample. However, the estimates suggest economically meaningful positive effects on the share of individuals who ever changed occupations and the share who ever changed industries, although these estimates are not statistically significant. In contrast, the policy has a negative point estimate for period-level occupation changes, but this effect is also statistically insignificant. Overall, the results provide limited evidence that the policy significantly changed job mobility among mid- to late-career workers based on the CPS ORG.

Table A7 reports the effects of Colorado’s pay transparency policy on job mobility by gender. The results in column (1) show that the policy had no statistically significant effect on the share of workers who ever changed employers for either men or women. However, column (2) shows that the policy increased the share of men who ever changed occupations, while the corresponding effect for women is close to zero and statistically insignificant. Column (3) further shows that the policy significantly increased the share of men who ever changed industries. By contrast, the estimated effect for women is negative but statistically insignificant. Although the negative estimate for women is economically meaningful in magnitude, the lack of statistical significance suggests that it should be interpreted cautiously. Overall, these results suggest that any job mobility response to the pay transparency policy is concentrated among men, particularly through occupation and industry changes, rather than employer changes.

The results in the last two columns show that, among men, Colorado’s pay transparency policy significantly increased the probability of changing occupations and changing industries. In contrast, the estimated effects for women are negative but statistically insignificant. Therefore, the evidence suggests that the policy encouraged job mobility among mid- to late-career men, particularly through occupation and industry changes, while there is no evidence of a positive mobility response among women. One possible interpretation is that improved access to information about outside options increased men’s incentives to move across occupations or industries. For women, however, the policy does not appear to have increased occupation or industry mobility. This may suggest that mid- to late-career women respond to wage information through other margins, such as increased wages or working hours, rather than through job mobility.

Table A6: Pay Transparency Law Effects on Job Mobility (ORG)

	Ever Changed employer	Ever Changed occupation	Ever Changed industry	Change occupation	Change industry
CO×Post	-0.000 (0.010)	0.011 (0.023)	0.030 (0.020)	-0.007 (0.021)	0.002 (0.021)
Observations	36,495	38,489	38,489	12,599	12,599
Adjusted R^2	0.008	0.040	0.050	0.043	0.059

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A7: Pay Transparency Law Effects on Job Mobility by Gender

	Ever changed employer	Ever changed occupation	Ever changed industry	Change occupation	Change industry
<i>Panel A: Male</i>					
CO×Post	-0.005 (0.011)	0.020** (0.009)	0.044* (0.026)	0.025*** (0.008)	0.059*** (0.022)
Observations	65,540	55,749	69,308	55,749	69,308
Adjusted R^2	0.019	0.016	0.053	0.015	0.063
<i>Panel B: Female</i>					
CO×Post	-0.001 (0.011)	0.000 (0.006)	-0.015 (0.018)	-0.008 (0.006)	-0.008 (0.020)
Observations	77,883	65,675	82,313	65,675	82,313
Adjusted R^2	0.015	0.019	0.051	0.019	0.061

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

D Summary Statistics of Wage Among Occupation

This section provides summary statistics for each occupation, including average wages, wage dispersion, and age–wage slopes, which capture differences in wage growth over the life cycle across occupations.

Table A8: Pre-policy Wage Level and Wage Dispersion by Occupation Group

Occupation group	N	Mean wage	Mean log wage	P90–P10	SD log wage
Management	4,697	32.800	3.377	1.258	0.497
Professional	5,578	31.180	3.312	1.362	0.526
Technical	834	26.240	3.152	1.333	0.484
Sales	2,120	22.130	2.911	1.629	0.599
Admin/Clerical	3,561	18.830	2.843	1.024	0.418
Residual Labor	867	15.690	2.642	1.079	0.451
Service	2,392	15.400	2.599	1.201	0.500
Craft/Repair	1,830	22.390	3.020	1.043	0.422
Operators/Assemblers	796	18.050	2.797	1.068	0.426
Transportation	856	17.480	2.767	1.036	0.424

Notes: The table reports pre-policy wage levels and wage dispersion by occupation group among employed mid- to late-career workers in Colorado. Hourly wages below \$1 are excluded. Wage dispersion is measured using log hourly wages. Protective service and service occupations are combined into the Service group.

Table A9: Pre-Policy Age-Wage Slopes by Major Occupation Before 2021

Occupation group	Age-wage slope	Standard error	Observations	R^2
Management	0.0090	0.0007	9,109	0.094
Professional	0.0080	0.0005	12,527	0.066
Technical	0.0079	0.0013	1,822	0.139
Sales	0.0054	0.0010	4,413	0.086
Admin/Clerical	0.0055	0.0006	6,824	0.071
Residual Labor	0.0037	0.0009	1,928	0.118
Service	0.0054	0.0006	5,631	0.063
Craft/Repair	0.0066	0.0006	3,907	0.084
Operators/Assemblers	0.0044	0.0008	1,594	0.123
Transportation	0.0039	0.0010	1,621	0.114

Notes: This table reports pre-policy age-wage slopes by major occupation group.

The dependent variable is log hourly wage. The age-wage slope is the coefficient on age from occupation-specific regressions estimated using employed individuals aged 25–64 in the pre-policy period. Each regression controls for year fixed effects, month fixed effects, and metropolitan-area fixed effects.

E Further Evidence on the Effect of Pay Transparency on Labor Supply

Table A10: Effects of Pay Transparency on Working Hours in the ORG Sample (Aged 45–64)

	Working hours: main job, ORG sample	
	(1)	(2)
CO $\times$ Post	0.424 (0.254)	0.332 (0.223)
Metropolitan Area FE	Yes	Yes
Year FE	No	Yes
Month FE	No	Yes
Year $\times$ Month FE	Yes	No
Industry $\times$ Year FE	Yes	No
Occupation $\times$ Year FE	Yes	No
Industry FE	No	Yes
Occupation FE	No	Yes
Observations	36,328	36,328
Adjusted R^2	0.148	0.148

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates for individuals aged 45–64 using the CPS ORG sample. The dependent variable is usual weekly hours worked in the main job. The sample is restricted to employed individuals with positive main-job hours. The treatment variable, CO $\times$ Post, equals one for individuals in Colorado after the implementation of the Equal Pay for Equal Work Act. All specifications include demographic controls and metropolitan-area fixed effects. Column (1) includes year-by-month, industry-by-year, and occupation-by-year fixed effects. Column (2) includes separate year and month fixed effects, industry fixed effects, and occupation fixed effects. Standard errors are clustered at the metropolitan-area level and reported in parentheses.

Table A11: Effects of Pay Transparency on Labor Force Participation and Working Hours Across All Jobs (Aged 45–64)

	Labor force participation		Working hours across all jobs	
	(1)	(2)	(3)	(4)
CO $\times$ Post	0.024 (0.022)	0.031 (0.020)	0.654*** (0.222)	0.622*** (0.212)
Metropolitan Area FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes
Month FE	No	Yes	No	Yes
Year $\times$ Month FE	Yes	No	Yes	No
Industry $\times$ Year FE	Yes	Yes	Yes	Yes
Occupation $\times$ Year FE	Yes	Yes	Yes	Yes
Observations	219,360	219,360	142,128	142,128
Adjusted R^2	0.056	0.056	0.104	0.104

Standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Notes: This table reports difference-in-differences estimates for individuals aged 45–64. The treatment variable, CO $\times$ Post, equals one for individuals in Colorado after the implementation of the Equal Pay for Equal Work Act. Columns (1)–(2) use labor force participation as the dependent variable. Columns (3)–(4) use usual weekly hours worked across all jobs as the dependent variable and restrict the sample to employed individuals with positive total weekly hours. All specifications include demographic controls, industry-by-year fixed effects, occupation-by-year fixed effects, and metropolitan-area fixed effects. Columns (1) and (3) include year-by-month fixed effects, while Columns (2) and (4) include separate year and month fixed effects. Standard errors are clustered at the metropolitan-area level and reported in parentheses.

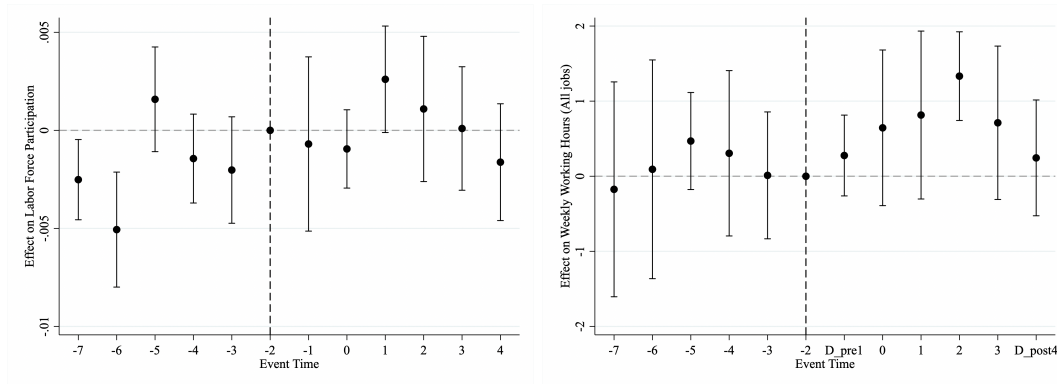


Figure A1: Event study: Labor Force Participation and Working Hours of All Jobs

F Heterogeneous effects among industries

This section provide evidence on the effects of pay transparency on hourly wage among industries.

Table A12 reports the estimated effects of Colorado’s pay transparency policy on hourly wages by industry group. The results show that the policy significantly increased hourly wages among workers in agriculture, fishing, forestry, mining, and construction; wholesale and retail trade; and professional and related services. The estimated effects are also positive for workers in manufacturing and in transportation, communication, and utilities. Although these estimates are not statistically significant, their magnitudes are economically meaningful.

In contrast, the estimated effect is small and statistically insignificant for workers in public administration, suggesting a limited wage response in this industry group. The estimates are negative for workers in personal and entertainment services and for workers in finance, insurance, real estate, and business services. The negative effect is particularly pronounced and statistically significant for finance, insurance, real estate, and business services.

Figure A3 shows the event-study estimates separately for each industry group. The event-study results are generally consistent with the DiD estimates, although the estimates are less precise because of the smaller sample size within each industry group. Moreover, Figure A2 shows the yearly wage trends by industry group, and the findings are also consist with the DiD estimates. Therefore, the results suggest that the effects of Colorado’s pay transparency policy on wage vary by industries, suggesting that the benefits of wage disclosure may also depend on workers’ labor market structure within specific industries.

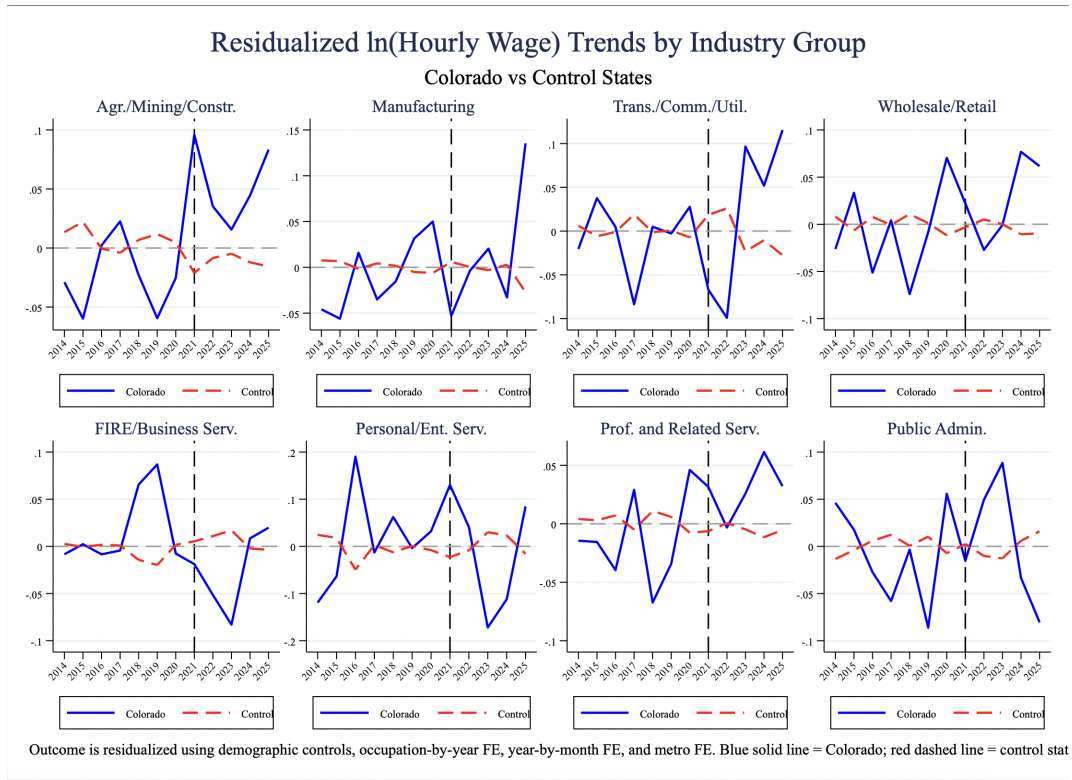


Figure A2: Hourly Wage Trends among Industries

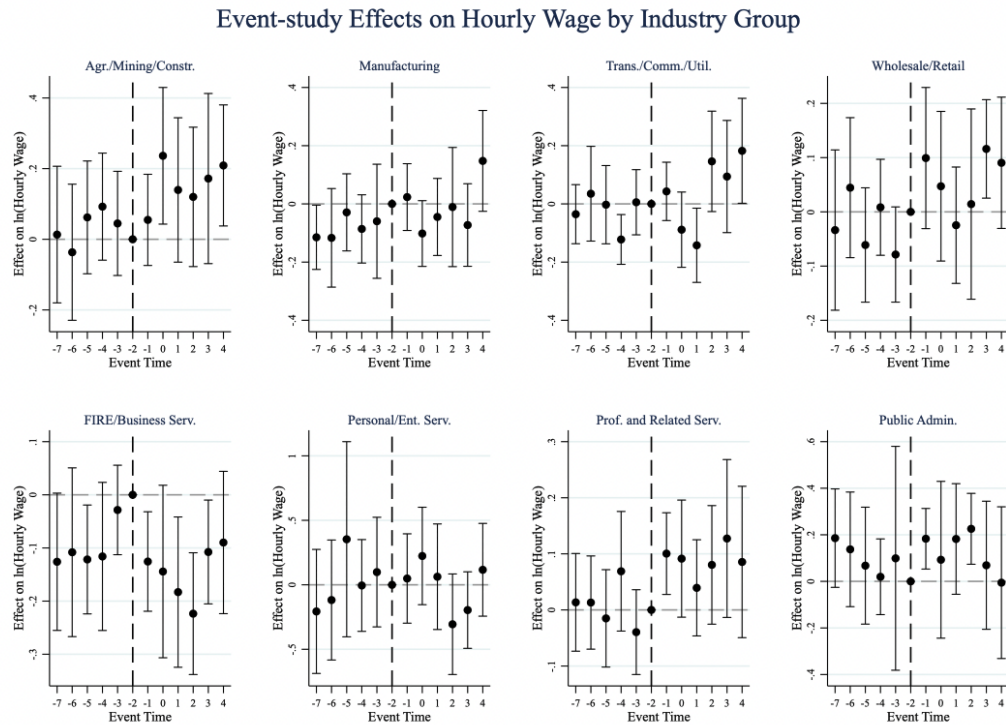


Figure A3: Hourly Wage Trends among Occupations

Table A12: Pay Transparency Effects on Hourly Wages by Industry

	Ag./Mining Constr.	Mfg.	Trans. Comm./Util.	Wholesale/ Retail	FIRE/Bus. Serv.	Pers./Ent. Serv.	Prof. Related Serv.	Public Admin.
Colorado $\times$ Post	0.142** (0.057)	0.049 (0.031)	0.036 (0.038)	0.046** (0.020)	-0.066*** (0.021)	-0.041 (0.063)	0.063** (0.025)	0.005 (0.040)
Observations	2,269	4,375	2,663	5,050	5,667	1,106	12,721	2,355
Adjusted R^2	0.328	0.481	0.351	0.421	0.415	0.356	0.364	0.343

Notes: The dependent variable is log hourly wage. Standard errors clustered at the metropolitan-area level are reported in parentheses. Ag./Mining Constr. combines agriculture, fishing, forestry, mining, and construction; Mfg. denotes manufacturing; Trans. Comm./Util. denotes transportation, communication, and utilities; Wholesale/Retail combines wholesale and retail trade; FIRE/Bus. Serv. combines finance, insurance, and real estate with business services; Pers./Ent. Serv. denotes personal and entertainment services; Prof. Related Serv. combines healthcare and educational, social, and professional services; Public Admin. denotes public administration. All specifications include demographic controls, fixed effects shown in the corresponding regressions, and metropolitan-area fixed effects. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

G Diagnosing the 2020 wage fluctuation

As shown in the event-study estimates for hourly wages, Colorado exhibits a significant positive coefficient in 2020, one year before the implementation of the pay transparency policy. This pre-treatment deviation weakens the parallel trends assumption and raises the possibility that the estimated wage effects are influenced by factors unrelated to the policy. This section investigates the source of the 2020 wage fluctuation and examines whether the estimated effects of pay transparency remain after accounting for it.

A plausible explanation is that the 2020 fluctuation reflects compositional changes in employment during the COVID-19 pandemic rather than genuine wage growth. COVID-19 affected employment unevenly across workers, and if lower-paid workers were more likely to exit employment than higher-paid workers, average observed hourly wages would increase mechanically even if wages for continuing workers remained unchanged. Because these composition effects may differ across occupations, I first examine whether the pre-treatment deviation is concentrated within particular occupation groups.

Figure 10 shows that the 2020 wage fluctuation is concentrated almost entirely in management occupations, while the remaining occupation groups display little evidence of differential pre-treatment wage movements. This finding suggests that the positive pre-treatment coefficient is driven by occupation-specific shocks rather than by a broad wage trend affecting the Colorado labor market.

I next examine whether this pattern reflects changes in workforce composition within management occupations. Two channels are considered: changes in gender composition and changes in the wage distribution. Figure A4 shows little evidence that the gender composition of management occupations changed substantially during the pandemic, as employment declined for both men and women. By contrast, Figure A5 shows that management occupations have both the highest average wages and the widest wage distribution among the major occupation groups, making average wages particularly sensitive to changes in worker composition. Consistent with this explanation, Figure A6 shows a noticeable shift in the wage distribution of Colorado management workers in 2020, with the share of lower-wage workers declining and the share of higher-wage workers increasing relative to the control states. Taken together, these findings suggest that the 2020 wage fluctuation primarily reflects COVID-related compositional changes within management occupations rather than a genuine pre-policy wage trend.

Motivated by this evidence, Figure A7 compares hourly wage trends before and after excluding management occupations. When management occupations are included, Colorado's hourly wages diverge noticeably from those of the control states during the COVID-19 period. After excluding management occupations, however, the pre-policy wage trends become substantially more similar, suggesting that management occupations account for most of the apparent pre-treatment divergence.

Finally, Figure A8 presents the corresponding event-study estimates after excluding management occupations. The pre-treatment coefficients are close to zero, providing support for the parallel trends assumption in the restricted sample. At the same time, the estimated effects of pay transparency remain positive and become statistically significant in the later post-treatment periods. These results

indicate that the main findings are robust to removing the occupation group most affected by the COVID-related composition shock and suggest that the apparent pre-treatment deviation is unlikely to reflect anticipation effects or a genuine pre-policy wage trend.

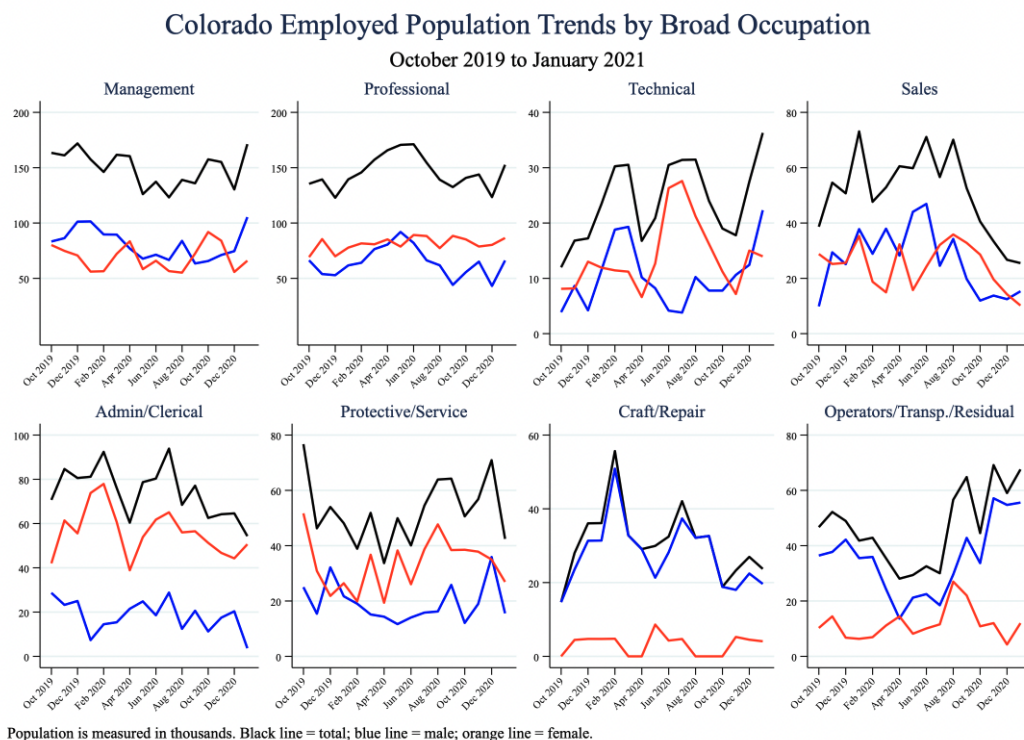
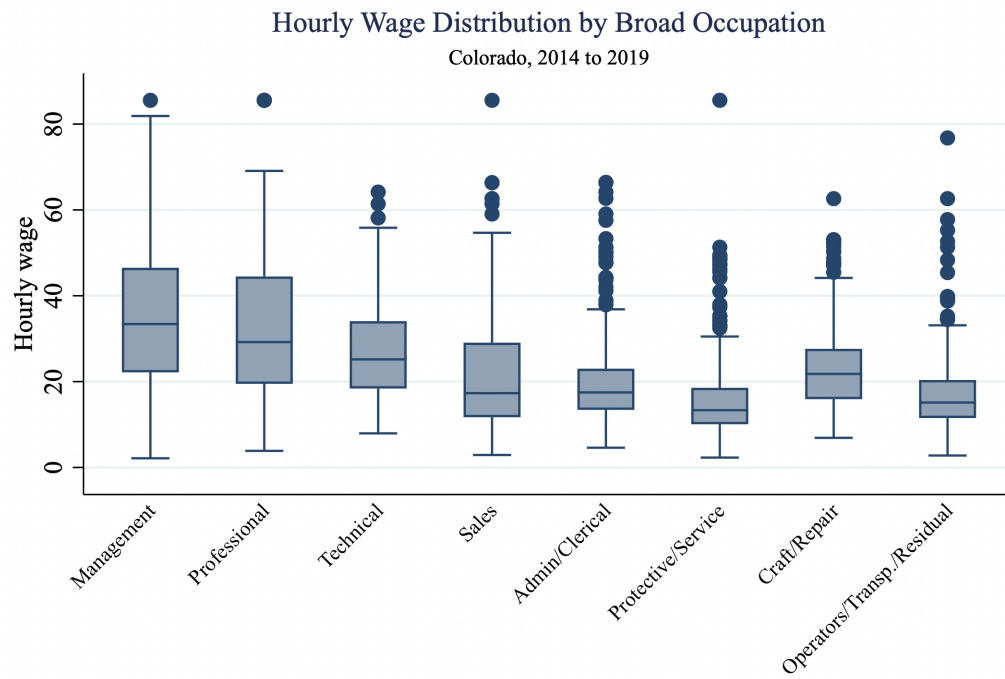


Figure A4: Share of Population in Occupations



Sample includes employed workers aged 45--64 in Colorado. Hourly wages are trimmed at the 1st and 99th percentiles.

Figure A5: Pre-COVID Hourly Wage Dispersion across Occupation Groups

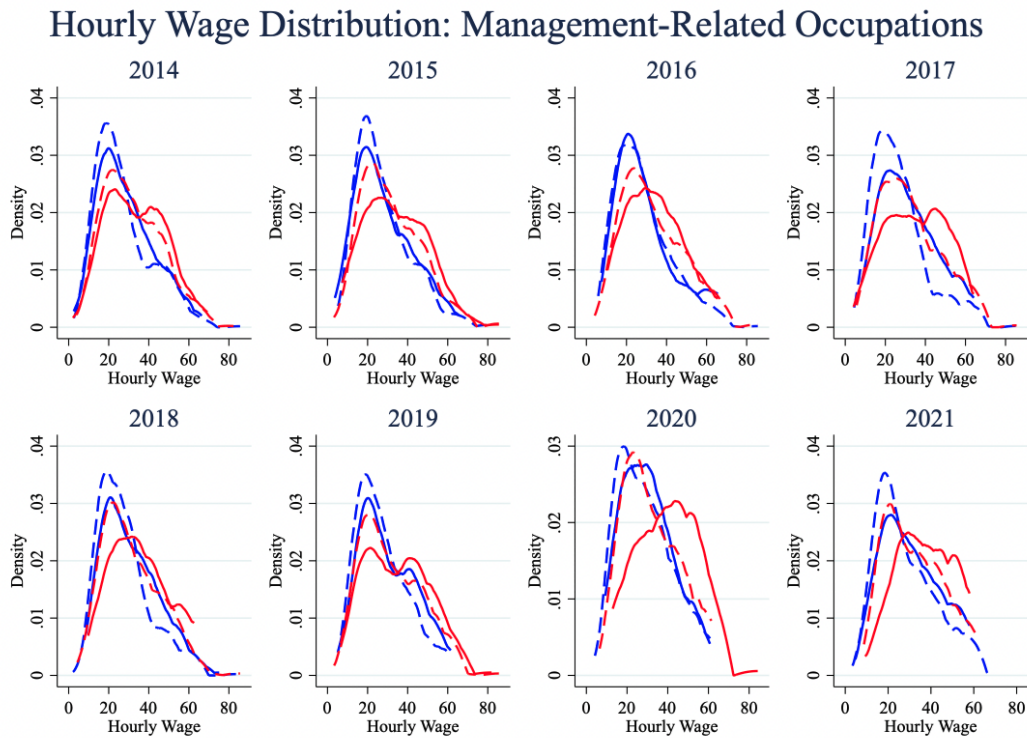


Figure A6: Wage Distributions Among Groups

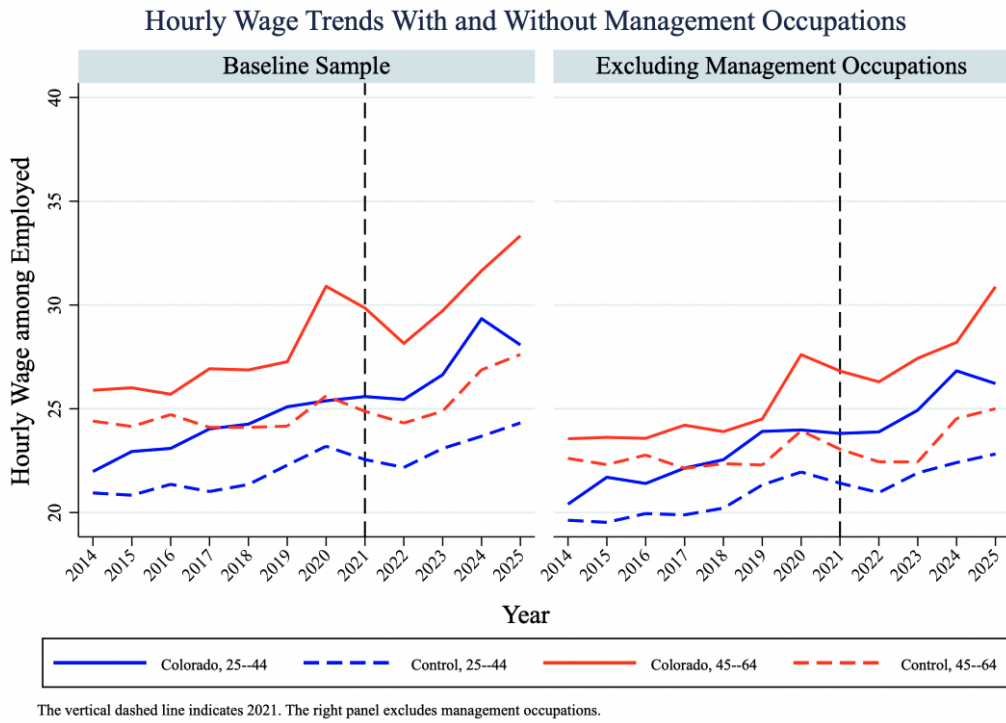


Figure A7: Wage Year Trends in Management

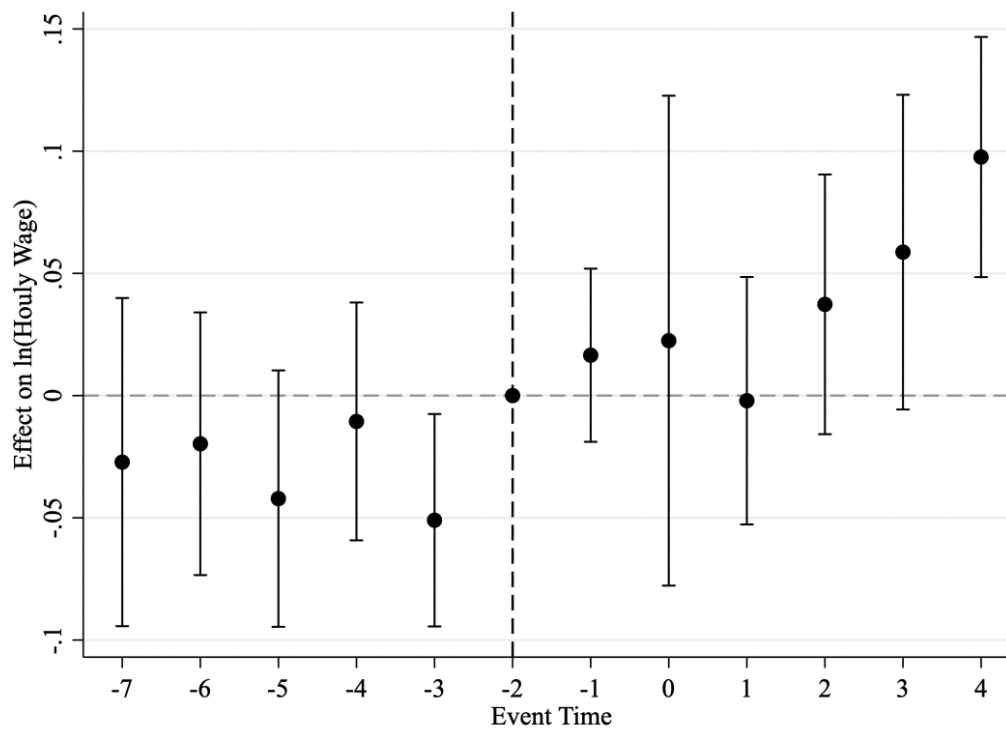


Figure A8: Event Study: Effect on Hourly Wage Exclude Management