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THE GENDER GAP IN PAY

Martha J. Bailey
Thomas E. Helgerman
Bryan A. Stuart

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ABSTRACT

In the 1960s, two landmark statutes—the Equal Pay and Civil Rights Acts—targeted the long-standing practice of employment discrimination against U.S. women. For the next 15 years, the gender gap in median earnings among full-time, full-year workers changed little, leading many scholars and advocates to conclude the legislation was ineffectual. This paper uses two different research designs to show that women's relative wages grew rapidly in the aftermath of this legislation. The data show little evidence of short-term changes in women's employment, but some results suggest that firms reduced their hiring and promotion of women in the medium term.

Martha J. Bailey
University of California, Los Angeles
Department of Economics
Bunche Hall
315 Portola Plaza
 Los Angeles, CA 90095
and NBER
marthabailey@ucla.edu

Thomas E. Helgerman
Department of Economics
University of Michigan
611 Tappan Street
Ann Arbor, MI 48109
tehelg@umich.edu

Bryan A. Stuart
Federal Reserve Bank of Philadelphia
Research Department
10 Independence Mall
Philadelphia, PA 19106
USA
bryan.stuart@phil.frb.org

In the 1960s, two landmark pieces of legislation targeted the long-standing practice of employment discrimination against U.S. women. The Equal Pay Act of 1963 became the first piece of federal legislation to mandate equal pay for equal work through an amendment to the Fair Labor Standards Act (FLSA) (P.L. 88-38). The following year, Title VII of the Civil Rights Act of 1964 went further to ban sex-based discrimination in hiring, firing, and promotion (P.L. 88-352).

Today, few histories conclude that the legislation succeeded, at least in its early years. Annual estimates reported for decades by the Census Bureau show that—among full-time, full-year workers—the median annual wage earnings for women hovered around 60 percent of men's for 15 years after the legislation passed (Figure 1A). Commentators and scholars have pointed to the limitations of the Equal Pay Act's "equal work" provision, especially given the large amount of occupational and firm segregation. In her study of the 1970 Area Wage Surveys for Boston, New York, and Philadelphia, Blau (1977) notes extensive segregation of women and men across firms. Goldin (1990) argues that "equal pay for equal work has been … a rather weak doctrine to combat discrimination" (p. 201) and that "Title VII of the 1964 Civil Rights Act has also been weak in counteracting pay inequities that arise from differences in jobs and promotion" (p. 209), in large part due to the lack of enforcement of sex discrimination complaints. In 1990, Victor Fuchs summed up the professional consensus: "It is easy enough to find particular instances where these laws opened up jobs that were previously closed to women or resulted in a realignment of women's pay scales, but it is difficult to see any major effects on broad trends in women's wages or employment" (p. 27).

Yet a closer examination of the earnings distribution for a broader set of workers hints that the legislation mattered more than previously believed. Expanding the Census Bureau's sample to include full-time women working at least 27 weeks, which is more similar to modern analyses (Blau and Kahn 1997, 2006, 2017), we find that the gender gap converged rapidly after 1964 for lower-wage workers (Figure 1B).[1] The historical record supports this conclusion as well. The Department of Labor reported great

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[1] The Census Bureau has reported the gender gap at the median for full-time, full-year workers for decades. Use of the median and full-time sample choice is motivated by a desire to summarize pay gaps for individuals with a similar

success with the Equal Pay Act's enforcement (Moran 1970), and the *Wall Street Journal* celebrated the tenth anniversary of the legislation, headlining that $416 million (2022 dollars) had been awarded to 140,000 workers in the legislation's first decade (Hyatt 1973). Although few contemporaries claimed that Title VII affected sex discrimination before 1971, the law's timing and role in strengthening and broadening the Equal Pay Act's wage provisions make its effects difficult to rule out.

This paper reexamines the combined effects of the Equal Pay Act and Title VII on women's labor market outcomes in the 1960s using two complementary approaches. Motivated by Neumark and Stock (2006), our first approach is based on the logic that federal anti-discrimination legislation—if effective—should have larger effects in the 28 states without pre-existing equal pay laws. Drawing on the 1950-1960 Decennial Census and 1962-1975 Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS), we find that women's weekly wages rose by around 9 percent (8.7 log points) more in states without pre-existing equal pay laws after the federal legislation took effect. These estimates are robust to controlling for state-by-birth-cohort fixed effects, which flexibly account for cohort-level shifts in women's aspirations and skills (Goldin 2006a, b), as well as industry-by-year and occupation-by-year fixed effects, which flexibly account for national changes in the economy. While this research design has the advantage of characterizing broad changes in the labor market, its internal validity is limited to the extent that unobserved forces may have differentially affected labor markets in states without pre-existing equal pay laws.

Our second approach addresses this concern by examining within-state changes in women's relative wages following the passage of the legislation. This approach follows Card's (1992) influential work on the minimum wage, which exploits the fact that a national policy has greater incidence in areas

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level of labor-market attachment while limiting the role of outliers. But this limited perspective and sample has consequences for understanding the gender gap. In the 1960s, most women workers did not work full-time all year long, which means that the gender gap reported by the Census Bureau in Figure 1A represents the experience of a selected set of the female labor force. Only 45 percent of working women in 1964 worked at least 35 hours and at least 50 weeks per year versus over 72 percent of working men. Appendix Figure 1 plots estimates that mirror Figure 1B for full-time, full-year workers, along with unsmoothed estimates. Other researchers have noted that trends in the gender wage gap differ when relaxing the full-time, full-year restriction. See Blau and Beller (1988) for a discussion of changes in the gender gap from 1971 to 1981.

where more individuals are affected. Although we do not observe sex discrimination in the data, this paper hypothesizes that the observed gender gap in pay within industry-occupation-state-group cells is correlated with this latent variable. If this hypothesis holds and federal anti-discrimination legislation was somewhat effective, we expect women's wages to rise more quickly after the 1964 legislation took effect in job cells with larger pre-existing gender gaps. An advantage of this research design is that it permits the inclusion of state-by-year fixed effects to absorb potentially confounding time-varying state-level factors that could compromise the internal validity of the first research design.

Consistent with federal legislation narrowing gender gaps, we find that women's weekly wages grew more quickly after 1964 in job cells with larger pre-existing gender gaps—an effect equivalent to 11 percent (10 log points) at the mean gender gap. Noteworthy is that effect sizes do not differ for White and Black women, which suggests that the estimates are not driven by the Civil Rights Act's effects on racial discrimination. In addition, the design recovers no effects of the legislation on men's wages, which ameliorates concerns that alternative labor-market shocks or policies drive these findings.

Heterogeneity tests underscore the complementarity and validity of the two empirical approaches. In states without pre-existing equal pay laws—where federal anti-discrimination legislation should have been more effective—women's weekly wages grew by 18 percent at the mean after 1964, whereas women's wages grew by one-third that amount (6 percent) in states with pre-existing equal pay laws. In addition, we estimate recentered-influence-function (RIF) regressions to show that the largest effects of the legislation accrued to women in the lowest percentiles of the wage distribution (Firpo, Fortin, and Lemieux 2009), which connects these findings to the large wage growth among women below the median in Figure 1B. These patterns are consistent with compliance being greater in jobs where the "equality of work" was more easily judged and where the Wage and Hour Division (WHD)—the agency tasked with enforcing the Equal Pay Act—focused its investigations of compliance with the minimum wage.

A final analysis investigates how federal anti-discrimination legislation affected women's employment. Consistent with firms having some monopsonistic power to set wages, the data provide little evidence that women's employment or annual hours fell in response to wage increases in the short run—

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findings that align closely with Manning's (1996) study of the Equal Pay Act in the United Kingdom. In the long run, however, we find some evidence that women's employment grew more slowly in more affected job cells, which is consistent with Neumark and Stock's (2006) study of state-level anti-discrimination legislation before 1960. Contemporary accounts provide direct evidence as to why this might have been the case. After the passage of the Equal Pay Act but prior to the Civil Rights Act (which made the practice illegal), employers told journalists that they planned to "segregate male and female job classifications" and "downgrade job classifications for women and assign higher-paying duties to men" in response to the Equal Pay Act (Washington Post 1964).

In summary, these results imply an important role for the Equal Pay Act and Title VII in reducing pay discrimination against U.S. women. The magnitudes of our findings suggest that federal anti-discrimination legislation reduced the within-job gender gap in pay by at least 58 percent but may have slowed the integration of women into higher-paying, historically male jobs.

I. A History of the Equal Pay Act and Title VII of the Civil Rights Act

In the early 1960s, sex discrimination in labor markets was not only widely accepted, it was also institutionalized and legal. State laws mandated different minimum wage, break, and rest requirements for men and women and placed different restrictions on the jobs men and women could hold (Moran 1970, Marchingiglio and Poyker 2021). Union contracts delineated different pay schedules by sex for the same job (Eaton 1965). Newspapers posted help-wanted advertisements for male and female jobs (Pedriana and Abraham 2006), along with explicitly different pay scales for what appear to be the same jobs.[2] Firms often fired women when they got married (Goldin 1991) and more routinely when they became pregnant (Gruber 1994).

After World War II opened many jobs to women, their labor-force participation rates grew rapidly, rising from around 26 percent to 35 percent between 1940 and 1960 (Goldin 1990, p. 17). The rise of

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[2] In an analysis of these advertisements, Hunt and Moehling (2021) find an advertised gender wage gap of 38 log points in three cities in 1960, 28 log points of which corresponds to within-agency differences in pay.

scheduled part-time work in the 1940s and 1950s pulled significant numbers of married women into the labor force, many of whom worked fewer than 35 hours per week. Changes in part-time work were particularly pronounced in certain sectors. For example, only 14 percent of the female sales sector worked part-time in 1940 but 40 percent did by 1960 (Goldin 2006a). The increase in part-time work also reinforced the segregation of women into certain jobs. Women tended to work as secretaries, teachers, nurses, librarians, and social workers. In the 1960 Census, approximately 83 percent of male workers were employed in occupations in which no more than 20 percent of the workers were female (Blau 1977, p. 12), but some women were entering male-dominated fields: 58 percent of women worked in occupations where they comprised more than 80 percent of the workers, with the other 42 percent working in more integrated fields (Ibid).

Between 1950 and 1960, men's weekly wages grew by 32 log points, whereas women's weekly wages only grew by around half that figure, increasing the gap in pay by around 16 log points (Appendix Table 1A). A Kitagawa-Blinder-Oaxaca decomposition using basic demographic variables (log hours worked per week, years of schooling, years of potential experience, an indicator for being married, and an indicator for race) shows that only 13 percent (=0.022/0.164) of the growing gender gap is explained by changes in women and men's characteristics (primarily hours worked). Much of the gender gap, however, is explained by occupational segregation. Adding detailed indicators for industry (143 categories) and occupation (263 categories) raises the explained share of the increase in the gender gap to 60 percent.

A. State and Federal Equal Pay Acts

Within this broader context of a rising gender pay gap, the 1963 Equal Pay Act represented a watershed moment following decades of advocacy. Federal equal pay legislation was first introduced to Congress in 1945 after wage studies showed pervasive wage inequality between women and men in wartime industries. The Women's Bureau in the Department of Labor documented multiple examples of sex-based pay discrimination, including discrepancies in entry wages and pay for more experienced workers in

identical jobs (Fisher 1948).[3] Although federal legislation failed to pass for two decades, 22 states passed equal pay laws before 1963 (U.S. Congress 1963). State equal pay laws were primarily in the Northeast, Midwest, and West (Figure 2), where their aim was often to keep women from undercutting men's wages rather than raising women's earnings. Arkansas was the sole state in the South to pass equal pay legislation.

State equal pay laws varied in their language and enforcement. Michigan and Montana, the two states that passed the first equal pay laws in 1919, illustrate these differences well. While Montana's law applied to nearly any enterprise employing men and women, Michigan's law applied only to employees in manufacturing. A common thread across these two states is that neither one went beyond making a "general declaration of law," which made these laws difficult to enforce (Fisher 1948, p. 54). In making the case for a national Equal Pay Act to Congress, the Women's Bureau noted that state laws "leave large groups of workers out, and often have inadequate provisions for administration and enforcement" (U.S. Congress 1963, p. 20).

The momentum to pass federal anti-discrimination legislation in the 1960s grew out of President John F. Kennedy's Commission on the Status of Women. The Equal Pay Act was first introduced to Congress in August of 1961 and managed to pass in both houses, but the business lobby undermined the bill during the reconciliation process (Harrison 1989). Esther Peterson, the Assistant Secretary of Labor and Director of the U.S. Women's Bureau under Kennedy, redoubled her efforts and revived the Equal Pay Act as an amendment to the FLSA (P.L. 75-718). In addition to producing detailed reports to document pay differences (U.S. Congress 1962), Peterson used her Congressional testimony to describe pervasive sex discrimination in employment. Analyzing pay differences among similarly experienced bank tellers working comparable hours, the Department of Labor found that women had lower weekly earnings in every city studied (U.S. Congress 1963, p. 31). Furthermore, surveys found that men out-earned women with the same title in nearly all establishments (p. 30, 37).[4]

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[3] Fisher (1948) reports one particularly egregious example: "In the gun manufacturing industry…where *experienced* men and women worked on five different types of machines, the *lowest* rate for men was at least ten cents *above* the highest wage paid to women" (p. 51).

[4] Appendix Table 2 reprints tabulations of gender differences in average hourly earnings across several industry-occupation categories in Chicago, Winston-Salem, and Philadelphia.

To quantify the gender gap in pay within narrowly defined jobs just before the Equal Pay Act passed, we digitized the 1963 Occupational Wage Surveys (OWS), which contain weekly or hourly wage observations by sex from 82 cities and 58 narrowly defined job classifications (U.S. Department of Labor 1963). The OWS show a 32-log-point gap in pay across all cities and jobs in 1963 (Appendix Table 3), which is similar to the gap in weekly wages in the Census and ASEC. When including fixed effects for detailed job classifications, the within-job gap in weekly pay is 17 log points—a sizable wage gap within jobs that could be targeted by the Equal Pay Act. Jobs with hourly pay show a larger total gender gap in pay of 44 log points, but a similar within-job difference in pay of 18 log points. The Labor Department noted that differences in pay occurred mostly in "large department stores, banks, airline reservation offices, chain stores, and other firms where men and women customarily perform similar work" (Eaton 1965).

Peterson's report also cited a National Office Management Association survey of employers in the U.S. and Canada, which asked, "Do you have a double standard pay scale for male and female office workers?" (U.S. Congress 1963, p. 27), where one third of employers answered, "Yes." In discussions with members of Congress, Peterson often cited a personal anecdote as well, noting that a manager told her, "We pay them less because we can get them for less" (quoted in Harrison 1989, p. 95).

Under Peterson's stewardship, the revised equal pay bill was introduced on February 14, 1963, and passed into law on June 10, 1963. The Equal Pay Act prohibited sex-based *wage* discrimination between men and women in the *same* establishment who perform jobs that require substantially *equal* skill, effort, and responsibility under similar working conditions. For workers not covered under collective bargaining agreements, the Equal Pay Act took effect on June 10, 1964. For the 13 percent of women who were unionized in the early 1960s (LeGrande 1978), the Act took effect the following year on June 10, 1965. As an amendment to the FLSA, the Equal Pay Act only applied to workers covered under the FLSA.[5]

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[5] Not all workers are covered under the FLSA, but its coverage was expanded in the 1961 and 1966 Amendments and in the 1972 Educational Amendments. The 1961 Amendments extended coverage to employees in retail or service, local transit, construction, and gasoline service stations. The 1966 Amendments expanded coverage to include employees on large farms, federal service contracts, federal wage board employees, and certain Armed Forces employees (e.g., post exchanges). It also narrowed or repealed exemptions for employees of hotels, restaurants, laundries and dry cleaners, hospitals, nursing homes, schools, auto and farm implement dealers, small loggers, local

B. Title VII of the Civil Rights Act

Just one year after the Equal Pay Act passed, Congress enacted the 1964 Civil Rights Act. Title VII of the Civil Rights Act largely overlapped with the Equal Pay Act in its coverage of pay discrimination but also extended its provisions by (1) expanding coverage to many workers not covered under the FLSA and (2) prohibiting sex-based discrimination in employment, including hiring, firing, and promotions. Coverage was not universal: Title VII did not apply to public sector employees until 1972 (Posner 1989), and the legislation covered only employers with at least 100 employees as of July 1965, a threshold that was gradually reduced to 25 employees by 1968.

The goal of the Civil Rights Act had little to do with gender equality, and the initial legislation did not include sex among the protected classes of race, color, religion, and national origin. "Sex" was added to Title VII's protected classes just one day before the final vote by a segregationist, Representative Howard Smith (D-Virginia), who opposed the Act's passage. Many commentators believe Smith intended to make the bill unpassable (Harrison 1989). Thomas (2016) explains how Rep. Smith played his amendment for laughs, claiming a letter from his constituent had asked him to "protect our spinster friends." One of the twelve women House Representatives, Martha Griffiths (D-Michigan), silenced the laughter, saying, "if there had been any necessity to point out that women were a second-class sex, the laughter would have proved it" (p. 102). The next day the legislation passed, codifying prohibitions of sex-based employment discrimination into federal law.

C. The Effectiveness of Anti-Discrimination Legislation in the 1960s

As an amendment to the FLSA, the enforcement of the Equal Pay Act fell to the WHD in the Department of Labor, which had been monitoring and enforcing compliance with the FLSA for 25 years

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transit and taxi companies, agricultural processing, and food services. Finally, the 1966 FLSA included an indirect expansion of coverage through its reduction in the enterprise volume test from $1 million (in the 1961 Amendments) to $250,000. See Bailey, DiNardo, and Stuart (2021) for a discussion of changes in coverage and minimum wages in the 1960s. Another quirk of the FLSA is that section 13(a)(1) carves out an exemption to the minimum wage and overtime provisions for any worker employed in a *bona fide* executive, administrative, or professional (EAP) capacity. Consequently, when the Equal Pay Act Amendment prohibited discrimination on the basis of sex, EAP-exempt workers were not covered by the Equal Pay Act. In 1972, Title IX of the Educational Amendments amended Section 13(a) to include EAP workers.

(P.L. 75-718). By the 1960s, firms knew that non-compliance could be punished by mandating the payment of back wages and criminal prosecution, and courts had already settled the fine points of interpretation. Following the Equal Pay Act's effective date, the WHD instructed its field staff to check for compliance with the new equal pay provisions as part of *all* investigations under the FLSA (U.S. Department of Labor 1965). In addition, the Labor Department filed suits signaling its intent to enforce the law. *Wirtz v. Basic Incorporated* (1966) challenged an employer's claim that a male analyst was entitled to more money because he had greater experience and responsibility. The court supported the Labor Department's claim of discrimination, noting that the work of three employees (one man and two women) was the same and that the man's greater experience was not a requirement of the job. The ruling emphasized that the statutory requirement of "differences in working conditions" could not be established by job title alone and that the burden of proof for any exceptions to equal pay lay with the employer.

The Department of Labor continued to enforce compliance with the Equal Pay Act, both reviewing labor union contracts and bringing multiple lawsuits. By the end of 1964, investigators had found $55,000 in discriminatory wage payments owed to women, and one firm voluntarily paid $227,000 in back pay when the WHD began checking for discrimination (in 2022 dollars). By 1965, around 80 percent of sex-discrimination complaints had led to back payments to workers. Likely due to the WHD's enforcement, Secretary Wirtz reported to Congress that "voluntary" compliance with the Equal Pay Act was high (U.S. Department of Labor 1966, p. 18). Many unions and employers made voluntary changes to eliminate contractual differences in wage rates, welfare and pension plans, sick leave, rest periods, and "marriage provisions" that dictated the loss of seniority and possible dismissal for women getting married. At the same time, the courts strengthened the law by issuing rulings to eliminate employer justifications for unequal pay.

Building on the federal Equal Pay Act, many states extended existing fair employment practice laws to prohibit pay discrimination on the basis of sex, while others passed new equal pay legislation. These state measures supplemented the federal law by extending the equal pay principle to areas not covered by federal statutes (Simchak 1971). By the end of the 1960s, some contemporaries concluded that the Equal

Pay Act had been successful in achieving its aims (Moran 1970). Hole and Levine (1971) argue that "the Equal Pay Act [is] the only law dealing with sex discrimination that is anywhere near properly enforced" (p. 29).

The enforcement of Title VII was a different story. The Equal Employment Opportunity Commission (EEOC)—the newly created agency tasked with enforcement—had limited will and authority to enforce the law's sex-based provisions (Munts and Rice 1970). The EEOC regarded its primary mission as reducing racial discrimination, maintaining that "the addition of *sex* to the law had been illegitimate— merely a ploy to kill the bill" (Harrison 1989, p. 187).[6] Another complication was that Title VII challenged decades of state protective legislation that explicitly set different standards by sex. Because the 1965 EEOC did not see "any clear Congressional intent to overturn all of these [state] laws" (Ibid), it created a task force to provide states with guidelines—a process that took years (Munts and Rice 1970). In terms of enforcement authority, the EEOC was initially unable to bring its own lawsuits (unlike the Labor Department) and could only refer cases to the Department of Justice. Consequently, the EEOC had pursued very few sex discrimination cases by 1970. Simchak (1971) notes, "Of the total number of court cases filed by the Department of Justice to date (approximately fifty) under all the discrimination criteria in Title VII, only one has pertained to sex discrimination" (p. 555).

Ambivalence about sex discrimination outside the Labor Department is also evident in President Johnson's 1965 Executive Order 11246, an affirmative action mandate that omitted "sex" entirely (Johnson 1965). The order prohibited the federal government and federal contractors from employment discrimination on the basis of race, color, religion, or national origin only. This inaction galvanized women's groups and advocacy efforts and eventually resulted in Executive Order 11375 in 1967, which amended Order 11246 to include "sex" (Johnson 1967, Harrison 1989). But the EEOC's active enforcement of Title VII's sex provisions did not increase in earnest until after the U.S. Supreme Court's first decision

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[6] When a reporter asked Franklin D. Roosevelt, Jr., the EEOC's first commissioner, "What about sex?" Roosevelt joked, "I'm all for it." Similarly, the EEOC's second executive director, Herman Edelsberg, dismissed the sex provision as a "fluke" that was "conceived out of wedlock" (Thomas 2016). Title VII became known as the "Bunny Law," named after a satirized case in which Playboy turned down a man for a job as a Playboy bunny.

in *Phillips v. Martin Marietta Corporation* (1971), which ruled that an employer cannot hire men with young children while maintaining a policy to prohibit hiring women with young children.[7] Title VII was strengthened further by the amendments in the Equal Employment Opportunity Act of 1972, which gave the EEOC the authority to pursue independent lawsuits and expanded the Act's coverage of individuals employed by the government and smaller firms (P.L. 92-261).

Overall, the historical record provides a mixed picture of the success of the Equal Pay Act and Title VII in addressing labor-market discrimination against women in the 1960s. While the Equal Pay Act's provisions were seriously enforced starting in 1964 and extended through state legislation, the law's effects were likely limited by "equal work" requirements, which failed to address pay discrimination arising from differential hiring, assignment, and promotion of men and women. Title VII's provisions were broader, but the EEOC's reluctance and limited enforcement authority may have curbed the statute's effectiveness until the 1970s. Consistent with this history, research on the consequences of Title VII after the 1972 Amendments suggests the legislation raised women's relative wages and employment (Beller 1979, 1982a, b).[8]

II. Data and Research Design 1: Variation in the Incidence of Anti-Discrimination Legislation due to State Equal Pay Laws

Our analysis complements these historical accounts by quantifying the effect of the Equal Pay Act and Title VII on women's wages and employment. We combine the one-percent sample of the 1950 Decennial Census, the five-percent sample of the 1960 Decennial Census, and the 1962 to 1975 CPS ASEC to document labor-market outcomes for non-agricultural wage earners ages 25 to 64 in nationally representative data (Flood et al. 2022, Ruggles et al. 2023). Some analyses also use the combined one-percent Form 1 and Form 2 state samples of the 1970 Decennial Census.

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[7] Following *Marietta*, considerable ambiguity about sex discrimination remained. For instance, the U.S. Supreme Court in *General Electric Co. v. Gilbert* (1976) held that Title VII did not guarantee pregnant women equal coverage under employee benefit plans covering non-occupational sickness and accidents, which Congress remedied with the Pregnancy Discrimination Act of 1978 (Posner 1989).

[8] However, research has found that the racial provisions of the Civil Rights Act affected racial discrimination in the 1960s (see, among others, Heckman and Payner 1989; Donohue and Heckman 1991; Chay 1998; Almond, Chay, and Greenstone 2003).

A. Data Processing and Sample Restrictions

Our sample focuses on prime-age wage earners and excludes individuals under age 25 who may not have completed their schooling. To increase consistency between the ASEC and censuses, we restrict the censuses to individuals not in the Armed Forces or institutionalized. We additionally require that observations have non-missing data for industry, occupation, and state group of residence, which are critical for our empirical strategy. Our analysis uses nine industries (n), eight occupations (o), and 21 state groups (s).[9] We exclude individuals working in agriculture by dropping individuals with the occupation of "farmer" or "farm laborer" or the industry of "agriculture, forestry, and fishing." We also exclude individuals if they report being self-employed in the survey reference week or if the ratio of their self-employment and farm income to labor income exceeds 10 percent in absolute value (Lemieux 2006).

We convert annual wage earnings into 2022 dollars using the CPI-U. The census and ASEC ask about annual earnings and weeks worked in the year before the survey, so we index wages and employment to the appropriate year (e.g., the 1965 ASEC provides information about wages and employment in 1964). We construct log weekly wages by subtracting from log annual wage earnings the mean log number of weeks worked within each reported interval.[10] Because weekly wage earnings are measured with error due to (1) the aggregation of weeks worked into intervals and (2) misreporting by respondents about wage earnings and weeks worked, we evaluate the sensitivity of our results to using annual earnings and hourly wage earnings (see Appendix A) and to winsorizing the lowest five percentiles (see Appendix B).

Figure 3 describes the evolution of mean log weekly wages in states with and without pre-existing equal pay laws for both women and men. Several features of these plots stand out. First, weekly wages show a dip in the early 1960s relative to the 1960 Census, which likely reflects changes in the CPS sampling

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[9] The nine industries are mining, construction, manufacturing, transport/communications/electric/gas/sanitary services, wholesale trade, retail trade, finance/insurance/real estate, services, and public administration. The eight occupations are professional/technical, managers/officials/proprietors, clerical, sales, craftsmen, operatives, service, and non-farm laborers. The public ASEC only identifies 21 state groups consistently in our period of interest, which dictates our use of 21 "state groups."

[10] The 1960 Census and 1962-1975 ASEC report weeks worked last year in categories (1-13, 14-26, 27-39, 40-47, 48-49, and 50-52 weeks), whereas the 1976-1979 ASEC report weeks worked in integers. We use the 1976-1979 ASEC to estimate the mean log number of weeks worked within each category in the 1962-1975 ASEC by sex, race, and 10-year age bin. Similarly, the 1960 Census reports hours worked in categories. For this year, we use the mean log hours worked within each category estimated from the 1962-1979 ASEC by sex, race, and 10-year age bin.

frame between 1961 and 1963.[11] The dip in weekly wages is slightly larger for women and in states without equal pay laws, which should be kept in mind when interpreting our estimates. Second, states without equal pay laws tended to have lower average weekly wage earnings, which is not surprising given that the standards of living were lower in the South and western Midwest, which were less likely to have equal pay laws (Figure 2). Third, women's wages in states without pre-existing equal pay laws converge on those of women in states with equal pay laws after the mid-1960s—a pattern less evident among men.

B. Research Design 1: Pre-existing State Equal Pay Laws

Our first research design posits that anti-discrimination legislation should have larger effects in areas with more sex discrimination. Motivated by Neumark and Stock (2006), we test whether women's wages grew more quickly after 1964 in the 28 states that did not have pre-existing equal pay laws. This would be the case if state equal pay laws had already somewhat lowered sex discrimination, so that federal anti-discrimination legislation would have smaller effects in these states.

Event-Study Specification

We estimate the following event-study specification using ordinary least squares:

$$Y_{it} = \sum_{\tau=1949, \tau \neq 1964}^{1974} \alpha_\tau D_\tau NoEPL_{s(i)} + X'_{it}\beta + \gamma_{n(i)o(i)s(i)} + \delta_{s(i)b(i)} + \delta_{n(i)t} + \delta_{o(i)t} + \varepsilon_{it}. \quad (1)$$

The outcome, Y_{it}, is log weekly wage earnings of individual i in calendar year t=1949, 1959, 1961-1974. The independent variable of interest, $NoEPL_s$, is equal to 1 if a state group did not have an equal pay law as of January 1, 1963. In the three state groups containing states with and without equal pay laws, we use the share of workers residing in states without an equal pay law rather than a 0/1 coding.[12] We identify whether states had an equal pay law using statutory coding from the U.S. Congress (1962), which agrees

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[11]Changes to the sampling frame reflect changes in the population size and distribution as well as the industrial mix between areas as revealed in the 1960 Census. Interested readers may find a history of the CPS here, https://www2.census.gov/programs-surveys/cps/methodology/Techincal%20paper%2066%20chapter%202%20history.pdf (accessed December 30, 2021).

[12] We calculate the share of workers within a state group that live in a state without an equal pay law using the 1960 Census. In Arkansas-Louisiana-Oklahoma, 76 percent of wage earners were in a state without an equal pay law (Louisiana, Oklahoma). In Arizona-Colorado-Idaho-Montana-Nevada-New Mexico-Utah-Wyoming, 40 percent of wage earners were in a state without an equal pay law (Idaho, Nevada, New Mexico, Utah). In Maine-Massachusetts-New Hampshire-Rhode Island-Vermont, 5 percent of wage earners were in a state without an equal pay law (Vermont). Appendix Table 4 reports summary statistics by states' pre-existing equal pay law status.

with Neumark and Stock (2006, Table 2). Note that $NoEPL_s$ does not vary across time—it captures a state's legal environment as of 1963.

We interact $NoEPL_s$ with a set of year indicator variables, D_τ, omitting 1964—the year the Equal Pay Act took effect. Our parameter of interest, α_τ , captures the combined effects of the Equal Pay Act and Title VII on women's wages. If (1) sex discrimination in pay was larger in 1963 in states without state-level equal pay legislation and (2) national anti-discrimination legislation reduced sex discrimination in pay, we expect that $\alpha_\tau > 0$ for $\tau > 1964$. If the parallel trends assumption holds and states without equal pay laws were trending similarly before the Equal Pay Act and Title VII took effect, then we expect $\alpha_\tau = 0$ for $\tau < 1964$.

We include additional covariates to account for changes in workforce composition and improve precision. The vector X_{it} includes log hours worked in the reference week, an indicator variable for nonwhite race, and a quadratic in the worker's age.[13] Fixed effects for single-digit industry *n* by single-digit occupation *o* by state-group *s*, γ_{nos}, account for the average differences in wages across job classifications and labor markets. While these fixed effects focus the analysis on within industry-occupation-state-group wage changes, these cells are broader than the within-firm jobs targeted by the Equal Pay Act. To the extent that men shifted to higher-paying jobs within industry-occupation-state-group cells, our results may understate the wage effects of the legislation within the same jobs. We view this as a feature: the research design recovers changes in women's pay net of these potentially offsetting shifts in employment as long as they occur within a single-digit industry-occupation-state group cell.

Although this specification cannot include state-by-year fixed effects to account for time-varying within-state changes in labor markets or policies (Chay 1998, Almond, Chay, and Greenstone 2003, Cascio et al. 2010, Bailey and Duquette 2014, Bailey and Goodman-Bacon 2015, Goodman-Bacon 2018), it can accommodate other flexible controls. In some specifications, we include state-group-by-birth-year (*b*) fixed

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[13] The grouping of "nonwhite" is an aggregation necessitated by the data. Detailed race/ethnicity coding that would be used today is not consistently reported during the 1960s. Hispanic/Latinx origin is not available in the ASEC until 1971.

effects, δ_{sb}, which flexibly account for cohort-level shifts in women's aspirations and skills (Goldin 2006a, b) as well as differential state-level changes in labor-market skills (including educational quantity and quality, potential labor-market experience, and other unobserved cohort characteristics). Industry-year and occupation-year fixed effects, δ_{nt} and δ_{ot}, capture unobserved, national changes that affect all workers in these groups.[14]

A triple-differences specification (DDD) accounts for gender neutral labor-demand or supply shocks by using men as an additional comparison group. To the extent that the Equal Pay Act and Title VII reduced men's wages (either as a means for firms to comply with the law or in response to general increases in the cost of labor), this specification may overstate the resulting gains in women's wages. On the other hand, this specification could understate the effect on women's wages if the legislation caused firms to increase men's responsibilities (and pay) to maintain pre-existing wage hierarchies. Consequently, this exercise provides a complementary characterization of labor-market adjustments, rather than a falsification test. This specification interacts all variables in equation (1) with an indicator variable for sex, which allows the relationship of all covariates and fixed effects to differ between men and women.

<div align="center">Employment Outcomes</div>

Equation (1) cannot be estimated using employment as an outcome, because industry and occupation tend to be reported only for individuals who are employed. As a result, we define the dependent variable as the log of the survey-weighted number of employees or annual hours worked in a sex-specific industry-occupation-state-group (*nos*) cell in year *t*, where annual hours worked is the survey-weighted sum of the number of weeks worked last year multiplied by the number of hours worked in the reference week.[15] We estimate the following specification, which is similar to equation (1) with several modifications:

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[14] Educational attainment is available in all years except the 1963 ASEC. We omit this covariate from our main specifications to avoid dropping 1963 as a pre-treatment observation. Including education as a covariate changes the estimates very little (see Appendix Figures 4 and 10).

[15] We first construct annual hours worked for individuals by calculating multiplying the *level* of weeks worked by hours worked, where the level is calculated using the procedure described in footnote 10. Then, we aggregate to the *nos* cell.

$$Y_{nost} = \sum_{\tau=1949, \tau\neq 1964}^{1974} \alpha_\tau D_\tau NoEPL_s + X'_{nost}\beta + \gamma_{nos} + \delta_{nt} + \delta_{ot} + \varepsilon_{nost}. \qquad (2)$$

The first modification is that we replace the individual covariates with *nos* cell averages, including a quadratic in age and the share of workers that are nonwhite (we omit hours worked). Second, we make two further adjustments to minimize the importance of small *nos* cells. We limit the employment regressions to *nos* cells that have at least one wage earner in each of our years of interest and weight by the product of each cell's share of observations in the 1960 Census and the total number of observations in each survey year. These two adjustments maintain the representation of different cells over time and account for year-to-year changes in census and ASEC sample sizes. This approach places higher weight on cells which have more observations in 1960 or come from survey years with larger total sample sizes, which reduces the influence of small, noisy cells (Solon, Haider, and Wooldridge 2015). The weight does not depend on the number of industry-occupation-state observations in each survey year, as this would generate weights that reflect shifts in employment which might be driven by the legislation.

<u>Spline Specification</u>

Although the event-study specification provides a highly flexible and transparent description of the data, the estimates for individual years are often noisy. We, therefore, complement the event-study with a three-part spline specification with knots in 1964 and 1968, which summarizes the event-study estimates and improves precision. Using log weekly wage earnings as an outcome, the spline specification is,

$$Y_{it} = \widetilde{\alpha_0} NoEPL_{s(i)}t + \widetilde{\alpha_1} 1(t > 1964) NoEPL_{s(i)}t + \widetilde{\alpha_2} 1(t > 1968) NoEPL_{s(i)}t$$
$$+X'_{it}\tilde\beta + \tilde\gamma_{n(i)o(i)s(i)} + \tilde\delta_{s(i)b(i)} + \tilde\delta_{n(i)t} + \tilde\delta_{o(i)t} + \tilde\varepsilon_{it}. \qquad (3)$$

The first three terms interact linear time trends, *t*, with the $NoEPL_s$ variable as well as with indicator variables for the post-1964 and post-1968 period.[16] Thus, the spline succinctly summarizes trends in the data without placing too much emphasis on one (potentially noisy) point estimate or year. The remaining covariates correspond to those defined in equation (1). The spline provides a parsimonious method to test

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[16] Note that the terms, $\widetilde{\alpha_3} t + \widetilde{\alpha_4} 1(t > 1964)t + \widetilde{\alpha_5} 1(t > 1968)t$, are not identified due to the inclusion of year fixed effects.

and, if necessary, adjust for pre-trends, as captured in $\widetilde{\alpha_0}$.[17] The coefficient, $\widetilde{\alpha_1}$, and corresponding standard

error also admit a formal test for a trend break in outcomes after 1964, when the federal legislation first

took effect. The coefficient, $\widetilde{\alpha_2}$, allows the effects of the legislation to differ in the longer (1969-onwards)

and the shorter terms (1965-1968). Specifications for employment outcomes are analogous but estimated

at the aggregated *nos* level as previously described.

<div align="center">Standard Error Calculations</div>

In all regressions for research design 1, we cluster standard errors to correct for heteroskedasticity

and account for an arbitrary covariance structure at the state-group level (Huber 1967, White 1980, Arellano

1987, Bertrand, Duflo, and Mullainathan 2004). Because we only have 21 state groups, our tables also

report *p*-values on the null hypothesis that $\widetilde{\alpha_1} = 0$ from a wild cluster bootstrap procedure with 499

replications (Cameron, Gelbach, and Miller 2008).

III.   Results: Using Pre-Existing State Equal Pay Laws to Quantify the Effects of the Federal Anti-Discrimination Legislation on Labor-Market Outcomes

Figure 4 presents event-study estimates for three different specifications: one that includes only

industry-occupation-state-group fixed effects, year fixed effects, and demographic controls (model 1), one

that adds industry-year and occupation-year fixed effects to model 1 (model 2), and one that adds state-

group-by-year-of-birth fixed effects to model 2 (model 3). The estimates are highly robust to additional

controls. The three models show that wages grew more slowly for women in states without equal pay laws

between 1949 and 1963 relative to states with equal pay laws, but this pattern reversed after 1964. The

event-study coefficients in Figure 4A show that women's wages in states without equal pay laws rose by

7.3 log points (s.e. 1.9) more than in other states between 1964 to 1965, followed by more gradual gains

through the late 1960s.[18]

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[17] For a discussion of pre-trend adjustments, see Freyaldenhoven, Hansen, and Shapiro (2019) and Rambachan and Roth (2022).

[18] This estimate is the event-study coefficient on the year 1965 for the model 2 specification and is not reported in a table. Appendix Figure 2 shows that results are similar when examining log hourly or annual wages instead of log weekly wages, which addresses the concern that our results might be driven by measurement error in the weeks or hours worked variables. We construct log hourly wages as log annual wages minus the sum of log weeks worked and log hours worked, using the procedure described in footnote 10 to calculate mean weeks and hours within categories when necessary. In addition, Appendix Figure 3 shows the robustness of our findings to winsorizing up to the fifth percentile of the 1960-1964 wage distribution for women, which is equivalent to around

The timing of effects helps alleviate concerns that our results are driven by several other factors, such as the differential effects of the 1961 FLSA amendments, which raised the minimum wage and increased coverage (Bailey, DiNardo, and Stuart 2021),[19] and the adoption of Executive Order 11375, which prohibited sex-based discrimination by the federal government after November 1967 and federal contractors after October 1968. However, the event-study estimates show a slight increase in women's wages around the time of the Supreme Court's landmark decision about Title VII's sex provisions in *Phillips v. Martin Marietta Corp.* in 1971 and the Equal Employment Opportunity Act of 1972, which is consistent with the effects of the expansion in the Equal Pay Act's coverage, the expansion in Title VII's coverage, and the EEOC's enhanced enforcement powers (Beller 1979, 1982a, b, Chay 1998).

The timing of these effects also alleviates concerns that our results are driven by (1) 1967 revisions to the ASEC sampling frame and definition of employment (the estimates show little change in 1966) or (2) noise in the ASEC in the early 1960s. Regarding the latter, our three-part linear spline specification averages across years, which is plotted for our preferred model 2 specification in Figure 4A and is also presented in Table 1A. Importantly, the spline and event-study estimates for 1968 are almost identical at around 8.7 log points (s.e. 2.1, column 1). The spline also admits a formal pre-trend test, which shows no differential change in women's wages (column 1). Finally, the spline estimates confirm a statistically

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half of the minimum wage. This definition of a "too-low-wage" is comparable to Katz and Murphy (1992) and trims more than Blau and Kahn (2017), whose average value is 29 percent of the minimum wage. Appendix Figure 4 shows that our estimates are robust to controlling for education, and Appendix Figure 5 provides a similar conclusion when dropping states that adopted equal pay laws between 1959 and 1962.

[19] The 1961 FLSA raised the minimum wage for previously covered workers from $1 to $1.15 an hour effective in September 1961 and $1.25 per hour in September 1963. If our estimates capture the fact that women were disproportionately affected by the 1961 FLSA's minimum wage hikes, we expect to see gains in their wages in 1962 and 1964. Instead, Figure 4A shows gains in 1965, which occurred in the aftermath of the Equal Pay Act's implementation. In addition, the 1961 FLSA extended coverage to around 663,000 workers who were paid less than the minimum wage and worked primarily in large retail enterprises and construction (Martin 1967). For previously uncovered workers, a minimum wage of $1 per hour was implemented in September 1961, raised to $1.15 per hour in September 1964, and again raised to $1.25 per hour in September of 1965. If our empirical strategy is capturing the fact that women's wages were disproportionately affected by the FLSA's expansion in coverage, one would expect to see gains in their wages in each of the three years when the minimum wage for this group was raised: 1962, 1965, *and* 1966. Instead, Figure 4A shows only one large increase in their wages in 1965, which occurred in the aftermath of the Equal Pay Act's implementation. In addition, the estimated wage increases are nearly identical when excluding individuals employed in retail trade and construction (Appendix Figure 6). Moreover, if increases in the minimum wage or FLSA coverage are driving these findings, we would expect to find some increases for men's wages in the years of these changes. The estimates, however, show little evidence of a trend-break in men's wages. Regarding the role of the 1966 FLSA, Bailey, DiNardo, and Stuart (2021) and Derenoncourt and Montialoux (2021) find effects of the legislation in 1967 after it was implemented. However, Figure 4A shows striking wage gains for women in 1965 before this legislation took effect and little change in 1967. In summary, the evidence is inconsistent with the 1961 or 1966 FLSA driving the results.

significant, positive trend-break in women's wages after 1964 in states without equal pay laws (2.2 log points, s.e. 0.5).

The absence of similar changes in men's wages helps rule out the hypothesis that broad changes in labor markets or policies—rather than federal anti-discrimination legislation—are driving these results. Using the same specification and men's wages as the dependent variable, we find some evidence of gains in men's wages in states without equal pay laws after the mid-1960s (consistent with Figure 3B). However, gains in men's wages are entirely absent between 1964 and 1965 when the effects for women are largest. Figure 4B shows that men's wages in states without equal pay laws rose slightly *before* the legislation took effect (in 1963), failed to grow between 1964-1965 after the anti-discrimination legislation was implemented, and increased slightly in 1967 following the implementation of the 1966 FLSA amendments. Highlighting the benefits of event-study analyses, these mistimed effects show up in the spline estimates as a positive trend-break for men after 1964 (Table 1A, column 2), but with a magnitude about half as large as for women. For completeness, we report estimates from a triple-differences specification that uses men as an additional comparison group. However, the pre-treatment gains for men in the event-study suggest that this approach may understate women's wage gains.

The absence of similar changes among men also helps rule out that the Civil Rights Act's provisions to combat racial discrimination are driving these results (Heckman and Payner 1989, Donohue and Heckman 1991). While Southern states were less likely to have pre-existing equal pay laws, an obvious counterpoint is that the timing of women's wage gains, which occur between 1964 and 1965 (Figure 4A), largely pre-date the Civil Rights Act, which took effect in July of 1965, and are absent among men (Figure 4B), who show no wage gains between 1965 and 1966. It seems unlikely that the Civil Rights Act's race provisions would have such large effects between July and December 1965 but smaller effects in the subsequent years, when the legislation was in place for the full 12 months covered in the ASEC earnings question. A third piece of evidence is that the estimates are not statistically different for White women (8.4, s.e. 2.0) and Black women (8.5, s.e. 5.1) (Appendix Table 5, columns 4 and 5).

Altogether, the results suggest that the Equal Pay Act and Title VII boosted wages of working

women—a group accounting for roughly one third of the U.S. labor force in 1960. If labor markets were perfectly competitive and women were being paid their marginal product, differentials in pay would arise due to differences in men and women's skills. Consequently, mandating equal pay would encourage firms to lay women off, reduce their hours, and hire more men. However, if women's labor-supply to a firm is not perfectly elastic, firms might counterintuitively respond to the equal pay act by *increasing* the employment of women in response to higher mandated wages for them (Manning 1996).

Figure 5 describes the evolution of the log of the number of employees and the log of annual hours worked by states' equal pay law status. The timeseries show different pre-trends in both outcomes for both sexes, as employment in states without equal pay laws caught up with the rest of the country. The event-study estimates in Figure 6 formalize these comparisons and also adjust for covariates. Unlike for wages, the data show no evidence of a trend-break after 1964 in women's employment or hours worked relative to the pre-trend or relative to these outcomes for men, suggesting the legislation had little effect on women's employment at the extensive or intensive margins (Table 1, panels B and C).

In summary, these findings suggest that the Equal Pay Act and Title VII boosted wages of working women. To put these effect sizes in perspective, our preferred wage estimate from column 1 of Table 1 (8.7 log points) is just over half of the average within-occupation weekly wage gap (17 log points) in the 1963 OWS (Appendix Table 3, column 3). We conclude that there is little evidence from this first empirical strategy of a decline in women's employment, which is consistent with Manning's (1996) findings of labor-market monopsony for women in the U.K. As state-level variation in pre-existing equal pay laws limits our ability to rule out alternative hypotheses, we use a second and complementary research design to narrow the scope for omitted variables.

IV.   Research Design 2: Variation in the Incidence of Anti-Discrimination Legislation using the 1960 Gender Pay Gap

Our second research design also hypothesizes that the Equal Pay Act and Title VII—if effective— should have larger effects after 1964 in jobs with more pre-existing sex discrimination. Under the assumption that a larger 1960 gender gap in pay is correlated with more sex discrimination, we expect larger

relative wage gains after 1964 for women in jobs with larger gender gaps. An additional benefit of this approach is that it allows us to account for state-level shifts in labor demand or supply, policies, and economic conditions, which could confound the state equal pay law design.

A. The 1960 Gender Gap as a Proxy for Labor-Market Discrimination

We do not observe jobs or establishments in the censuses or ASEC, but we compute the gender gap in single-digit industry (n), occupation (o), and state group (s) "job cells." We rely on the 1960 Census (rather than the 1964 ASEC), because the census offers a much larger sample size which yields more reliable gender wage gap estimates for a larger number of industry-occupation-state-group cells and mitigates concerns about mean reversion.[20] Nine single-digit industries, eight single-digit occupations, and 21 state groups yield 1,512 potential job cells. We exclude from our analysis 562 cells that have fewer than ten women or ten men working full-time in the 1960 Census and eight that have no observations in the ASEC during our period of interest.[21] Our final sample consists of 942 industry-occupation-state job cells. For each job cell, we construct the unconditional gender wage gap in mean log hourly wages using the 1960 Census, $\widehat{Gap}_{nos} = \overline{logW_{nos}^m} - \overline{logW_{nos}^w}$, where m denotes men and w women, and the variable describes the extent to which men out-earn women.[22]

B. Descriptive Evidence that Federal Legislation Had More Effect in Jobs with Larger 1960 Gender Gaps

A key assumption of our approach is that a larger gender gap in wages in 1960 is correlated with greater sex discrimination. It is difficult to verify this assumption directly. However, if this assumption does not hold or the federal legislation was ineffective, we should find no association between the 1960 gender

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[20] The 1960 Census has around 629,000 women in the wage earner sample, whereas the 1964 ASEC has fewer than 6,000 such women, allowing us to construct only 75 job cells. If a high gender gap (reflecting lower women's wages) in a job cell in the 1964 ASEC reflects sampling variation, these job cells would tend to see higher wage growth for women in the year afterwards due to mean reversion. Using the 1960 Census to measure the gender wage gap eliminates this mechanical relationship.

[21] Included job cells are listed in Appendix Table 6 and excluded job cells are listed in Appendix Table 7.

[22] We use the sample of full-time workers to calculate the gender wage gap. The gender wage gap is nearly identical when we control for individuals' demographic and education characteristics using a quadratic in age, an indicator for workers of a nonwhite race, and a set of indicators for each year of schooling. The correlation between the unadjusted gender gap and the covariate-adjusted gender gap is 0.97 (Appendix Figure 7A), so we use the unadjusted gender gap for simplicity. Appendix Figure 7B shows that the gender gap in hourly wages is very similar to the gender gap in weekly wages (correlation of 0.98), and Appendix Figure 7C shows that the gender gap in weekly wages is nearly identical after controlling for demographics and hours worked (correlation of 0.97).

gap and subsequent growth in women's wages. We begin by presenting descriptive evidence from the 1960 and 1970 Censuses regarding the association between the gender gap, $\widehat{Gap}_{nos}$, women's wages, and their representation in different job cells. Figure 7A shows that the share of employees that are women differs considerably across industries and occupations, but there is little relationship between the female employment share in a job cell and the 1960 gender gap. On the other hand, Figure 7B shows that the gender gap tends to be much larger in lower paying job cells, many of which were in services and retail sales (slope coefficient: -1.9, s.e. 0.2). Reassuringly, these findings hold when accounting for sampling variation using a split sample instrumental variables (IV) approach (slope coefficient: -1.9, s.e. 0.2; Inoue and Solon 2010), or when accounting for transitory wage shocks using the 1940 gender wage gap as an IV (slope coefficient: -2.0, s.e. 0.2).[23]

To motivate our research design, Figure 8A plots the change in women's relative wages over the 1960s against the 1960 gender gap in wages. Each point represents the difference in outcomes between women and men for the industry-occupation-state-group cell, and the size of each point represents the number of women working in the cell in 1960. Consistent with the Equal Pay Act and Title VII ameliorating pay discrimination and increasing women's relative wages, we find that women's wages grew more than men's during the 1960s in job cells with larger gender gaps at the start of the decade. The similarity of the results when using the split sample IV (slope coefficient: 0.32, s.e. 0.03) or 1940 gender gap IV (slope coefficient: 0.42, s.e. 0.04) provides reassurance that these patterns are not driven by mean reversion due to measurement error or real transitory shocks to the labor market. Moreover, Figure 8D shows that this relationship did not exist in the 1950s, before anti-discrimination legislation should have affected sex discrimination in pay. In the 1960s, women's employment and annual hours grew more slowly than men's in job cells where women's relative wages grew more quickly (Figures 8B-8C). As with wages, these patterns depart from the 1950s, where the gender gap was not predictive of changes in employment (Figures 8E-8F).

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[23] We use the full-count 1940 Decennial Census to compute the gender gap in wages (Ruggles et al. 2021).

C. Event-Study and Spline Specifications

We use the following event-study specification to test whether these changes align with the passage of the Equal Pay Act and Title VII:

$$Y_{it} = \sum_{\tau=1949,\tau\neq1964}^{1974} \theta_\tau D_\tau \widehat{Gap}_{n(i)o(i)s(i)} + X'_{it}\beta + \gamma_{n(i)o(i)s(i)} + \delta_{s(i)t} + \delta_{n(i)t} + \delta_{o(i)t} + \varepsilon_{it}. \tag{4}$$

The dependent variable, Y_{it}, is log weekly wages of individual i in calendar year t=1949, 1959, 1961-1974, and $\widehat{Gap}_{nos}$ is as defined previously. We interact $\widehat{Gap}_{nos}$ with a set of year indicator variables, D_τ, and omit 1964, the year the Equal Pay Act became effective in June. Because $\widehat{Gap}_{nos}$ varies within state groups, the addition of state-group-by-year fixed effects, δ_{st}, allows the analysis to account for unobserved state-level changes in labor markets and policies. The remaining notation remains as described previously. Specifications for employment outcomes are analogous to equation (2) but replace $NoEPL_s$ with $\widehat{Gap}_{nos}$ on the right side in equation (4). Standard errors are corrected for heteroskedasticity and arbitrary correlation within industry-occupation-state-group cells (Huber 1967, White 1980, Arellano 1987).[24]

Our parameters of interest, θ_τ, capture changes across time in the correlation of women's wages with the gender pay gap in 1960. If federal legislation reduced labor-market discrimination against women, we expect women's wages to increase more after 1964 in job cells with a larger gender gap (i.e., $\theta_\tau > 0$ for $\tau > 1964$). Testing for changes in this correlation before 1964 also helps rule out potential confounders and assess the validity of the parallel-trends assumption. For instance, if women's productivity and work intensity were increasing differentially in jobs with larger gender gaps pre-dating the legislation, we would expect θ_τ to increase in years prior to 1964, leading us to reject the parallel trends assumption.

We summarize the event-study estimates using a three-part spline, or

$$Y_{it} = \widetilde{\theta_0}\widehat{Gap}_{n(i)o(i)s(i)}t + \widetilde{\theta_1}1(t > 1964)\widehat{Gap}_{n(i)o(i)s(i)}t + \widetilde{\theta_2}1(t > 1968)\widehat{Gap}_{n(i)o(i)s(i)}t \tag{5}$$

$$+X'_{it}\widetilde{\beta} + \widetilde{\gamma}_{n(i)o(i)s(i)} + \widetilde{\delta}_{s(i)t} + \widetilde{\delta}_{n(i)t} + \widetilde{\delta}_{o(i)t} + \widetilde{\varepsilon}_{it},$$

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[24] Appendix C uses a combination of a parametric bootstrap and a Bayesian bootstrap to show that accounting for sampling variability in estimates of the gender gap variable leads to standard errors that are very similar to those reported in the main tables.

where notation remains as previously defined.

V.   Results: Using the 1960 Gender Gap in Wages to Quantify the Effects of the Federal Anti-Discrimination Legislation on Labor-Market Outcomes

Figure 9A presents the event-study results for women, and Table 2A summarizes the event-study estimates using the spline. Point estimates and confidence intervals are scaled by the mean gender gap in the 1960 Census (equal to 0.374). Model 1 includes demographic covariates and industry-occupation-state-group and year fixed effects. Model 2 adds state-group-by-year fixed effects to model 1, and model 3 adds industry-year and occupation-year fixed effects to model 2.

Consistent with the Equal Pay Act and Title VII reducing labor-market discrimination against women, the data show that women's weekly wages increased by 10 log points (s.e. 2.3) between 1964 and 1968 in job cells with the average 1960 gender gap in pay (Table 2A, column 1). The magnitude of this estimate is equivalent to 58 percent of the average within-occupation weekly wage gap in the 1963 OWS (Appendix Table 3, column 3). Wages rise almost immediately following the legislation and remain stable between 1967 and 1970. Although changes in women's wages are not correlated with the gender gap after the implementation of the 1966 FLSA in 1967, the correlation again increases between 1970 and 1973. This timing is reminiscent of similar patterns in our first research design and corresponds to the Education Amendments broadening the coverage of the Equal Pay Act and the Supreme Court's 1971 decision and the Equal Employment Opportunity Act of 1972 strengthening and expanding the legal basis for enforcing Title VII's sex provisions.

These estimates are not only robust across specifications, they are also robust to using annual or hourly wage earnings (Appendix Figure 8), winsorizing low wage levels (Appendix Figure 9), controlling for education (Appendix Figure 10), accounting for measurement error or mean reversion following transitory labor-market changes in the 1950s or early 1960s (Appendix Figure 11), and excluding industries that saw substantial increases in minimum wage coverage under the 1961 FLSA (Appendix Figure 12). In contrast, we find no evidence of wage gains for men (Figure 9B; Table 2A, column 2), which narrows the scope for alternative labor-market or policy explanations. Recent work in differences-in-differences

highlights difficulties in interpreting the magnitudes of event-study regressions with a continuous treatment variable and treatment-effect heterogeneity, even in settings like ours without a staggered treatment timing (Callaway, Goodman-Bacon, and Sant'Anna 2022). Considering this issue, evidence of limited treatment effect heterogeneity for *nos* cells with average wages above and below the *nos*-cell median is reassuring (Appendix Figure 13).

We also explore the heterogeneity in women's wage gains to shed light on the mechanisms for these effects. Following Firpo, Fortin, and Lemieux (2009), we estimate RIF regressions to understand the effects of federal anti-discrimination legislation on the unconditional percentiles of women's log weekly wages. Figure 10A shows results, which are scaled by the mean gender gap in the 1960 Census. We find large increases in women's wages at the 10th and 25th percentiles after the legislation took effect (31 and 18 log points in 1968, respectively; Appendix Table 9), which is consistent with the legislation benefiting the lowest-earning women, for whom the gender gap in wages was largest (Figure 7B) and for whom convergence in the gender gap was the most rapid in the 1960s (Figure 1B). RIF-regressions using only the 1950, 1960, and 1970 Decennial Censuses yield similar results (displayed as single points), which ameliorates concerns that the estimates are driven by revisions in the ASEC sampling frame. In contrast, percentiles above the median show little evidence of a trend break after 1964 or any change through the 1970s. The same specification for men's wages shows little change at any point in the distribution (Figure 10B), which mitigates concerns that the results are driven by broad labor-market trends or policies. These findings suggest that the federal anti-discrimination legislation reduced the gender wage gap and also the wage gap in earnings between the highest and lowest paid women.[25]

As a final check on the validity of the results, we bring both research designs together to examine whether women's relative wages changed differently after 1964 in jobs with a higher gender pay gap in states without a pre-existing equal pay law. If state equal pay laws were somewhat effective in reducing

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[25] Appendix Table 8 examines effect heterogeneity across other population subgroups. The results show that the within-job cell wage gains for women following the Equal Pay Act and Title VII were pervasive. Wage increases are evident for White workers, which addresses the concern that our results are driven by provisions in the Civil Rights Act targeting racial discrimination.

sex discrimination, we expect women's wages to increase by more in job cells that had the same 1960 gender wage gap in states without pre-existing equal pay laws relative to states with equal pay laws. Said another way, effective prior legislation implies that the correlation of the same gender gap in pay in 1960 with sex discrimination should be weaker. Columns 4-5 of Table 2 confirm this prediction. In the 22 states with pre-existing equal pay laws, we find women's wages grew by 6.0 log points at the mean gender gap (s.e. 3.9, column 4). In states without equal pay laws, we find women's relative wages grew by much more after 1964—an increase of 16.2 log points by 1968 (s.e. 3.4, column 5).

In light of these large wage gains for women, how did the legislation affect their employment? Some direct evidence on this question comes from reports around the time the Equal Pay Act was passed. On June 14, 1964, the *Washington Post* interviewed different employers and reported:

> *...the head of a new Virginia manufacturing plant put it: "We had planned to employ women in some of our light manufacturing jobs, but we decided against it because of anticipated complications arising from the equal pay law." An Ohio manufacturer said his plant would downgrade some job classifications for women and reassign higher-level, higher-paying duties to men....*
>
> *Many employers said they would hike women's wages to bring them into line with men's. Some firms said they would equalize salaries now, but in the future would segregate male and female job classifications.*

Although Title VII would make this type of behavior illegal the following year, honest reporting before it passed provides important context. Notably, no employer said they would fire women in response to the Equal Pay Act—which is consistent with our findings when examining employment responses using state equal pay laws. However, employers indicated that they planned to change job classifications and hiring, which could show up as industry-occupation level changes in women's employment in the longer term.

Figure 11 tests this prediction using the event-study and spline specifications. In 1966, when women's wages soared in jobs with higher 1960 gender gaps, the number of female or male employees or annual hours worked changed little. Although Table 2 reveals a larger trend-break after 1964 for women than men, which translates into a reduction in employment of 11.8 log points by 1968 at the mean (s.e. 4.7, column 1) for women versus a 6.2-log-point decline for men (s.e. 2.9, column 2), the difference between

the two groups is not statistically significant (column 3). The decline in women's employment in states without pre-existing equal pay laws is larger (where women's wages grew more quickly), but neither estimate is statistically significant at conventional levels. In these states, the number of female employees relative to male employees experienced a sizable and marginally statistically significant decline of 11.2 log points (s.e. 6.9, column 5), although their relative number of annual hours did not fall discernibly. In contrast, in states with pre-existing equal pay laws where wages grew by less than one-third the amount by 1968, the trend break in employment and annual hours worked was much smaller and statistically insignificant.[26]

In summary, this evidence strongly suggests that the Equal Pay Act and Title VII lifted the wages of working women with some evidence that their employment fell in the longer term. Similar to what was reported in the *Washington Post*, different employers likely varied in their response to the legislation, which is difficult to detect without more information on jobs and establishments.

VI.   How the Equal Pay Act and Title VII Affected the Gender Gap in Wages

Almost 60 years after the Equal Pay Act and Title VII passed, little quantitative work suggests this legislation reduced pervasive pay discrimination against women. This paper provides new evidence that federal anti-discrimination legislation was more consequential in combatting sex discrimination in the 1960s than previously believed.

Using two complementary research designs, we find that federal legislation prohibiting sex-based pay and employment discrimination led to large increases in women's wages, especially in lower-paying jobs where the "equality of work" was more easily measured and investigations of compliance with the minimum wage were focused. After the legislation took effect, women's wages grew by around 11 percent in jobs with the average gender gap, with most of these effects benefitting women in the lower half of the

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[26] Appendix Table 8 shows that the employment effects of the Equal Pay Act and Title VII are large but imprecise across subgroups. Employment fell by 5.0 log points (s.e. 5.0, panel B, column 4) at the mean gender gap for White women. For Black women, the point estimate implies a decline in employment of 75 log points, but the standard error is very large (32 log points), leaving considerable uncertainty about the true effect. Employment among women with less than 12 years of education also experienced a large decrease with a large standard error.

weekly wage distribution. Importantly, anti-discrimination legislation appears to have had little effect on median wages among full-time, full-year workers, which has been the focal statistic released annually by the Census Bureau (Figure 1A). However, our estimates of larger gains among lower-wage workers in the mid-1960s correspond well to the gains below the median in the timeseries during this period (Figure 1B) (Bailey, Helgerman, and Stuart 2021). Consistent with firms having some monopsony power, the Equal Pay Act and Title VII had little effect on women's employment in the short run. In the longer-term, however, historical evidence suggests that some firms shifted their hiring away from women workers, which tracks with contemporary reports and scholars' critiques of the legislation.

The stability of the gender earnings ratio at the mean and median during the 1960s masks two opposing trends—an observation that helps reconcile the magnitudes in this study with those in the aggregate time series in Figure 1. First, economic forces pre-dating the legislation put downward pressure on women's relative pay in the 1960s. After World War II, strong economic growth drove up wages, but it raised wages for men wages faster than for women. Extrapolating trends from the period pre-dating the legislation implies that the gender wage ratio would have *fallen* rather than stabilizing. We are not the first to point this out. Beller (1979) argues that Equal Employment Opportunity laws staved off a larger 7-point increase in the earnings gap in the 1970s, and Blau and Kahn (2017) note that the increase in female labor-force participation during the 1960s may have masked the effects of the legislation in the aggregate time series.

Second, the estimates using the gender gap design reflect large changes in the *within-job* component of the gender gap, which is smaller than the overall gender gap. A Kitagawa-Blinder-Oaxaca decomposition shows that 69.7 percent of the 1960 gender gap in hourly earnings is attributable to differences within-industry-occupation-state-group cells used in our analysis.[27] Assuming the legislation had little effect on

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[27] We calculate this number as the sum over industry-occupation-state-group cells of the difference in the mean log wage for men and women, multiplied by the share of men employed in the cell. This calculation is 62.5 percent when multiplying the within-cell gender wage gap by the share of women employed in the cell. This share is not directly comparable to estimates of occupational segregation because our occupation/industry cells are larger groupings than job classifications. Polachek (1987) similarly finds that only 17-21 percent of gender differences in annual wage earnings in 1960 and 1970 can be explained by occupational segregation, which is similar to the conclusion of Goldin (1990, pp. 71-73). Blau (1977) finds that intra-firm pay differences are a small share of the total gender wage gap in 1970 in office occupations in three Northern cities for establishments with at least 50 employees

the allocation of workers across job cells, our estimate of a 10-log-point increase at the mean gender gap within job cells (Table 2) would translate into a 7.0 point gain in the aggregate gender gap.

Ignoring shifts in workers across jobs, these two countervailing changes imply a net gain of 5.2 log points at the mean (7.0 less 1.8 log points due to the pre-trend). But this change is still larger than observed in the timeseries, likely because changes in firm hiring and promotion behavior or larger shifts in the economy worked to offset women's wage gains within jobs.

In conclusion, our findings claim an important role for the Equal Pay Act and Title VII in reducing pay discrimination against U.S. women in the 1960s. Yet they also provide a cautionary tale: targeting pay discrimination without sufficient protections against employment discrimination provided leeway for firms to shift *how* they discriminated, leading the literature in economics to focus on occupational segregation and litigation to focus on strengthening Title VII over the next sixty years.

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(Tables 4-6). Using data from 1974 to 1983, Groshen (1991) finds that wage gaps from establishment and job segregation are around 6 percent, whereas occupational segregation accounts for a gap of 11 percent.

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Figure 1. Estimates of the U.S. Gender Gap in Wage Earnings

A. Census Bureau Estimates for Full-Time, Full-Year Workers at the Median
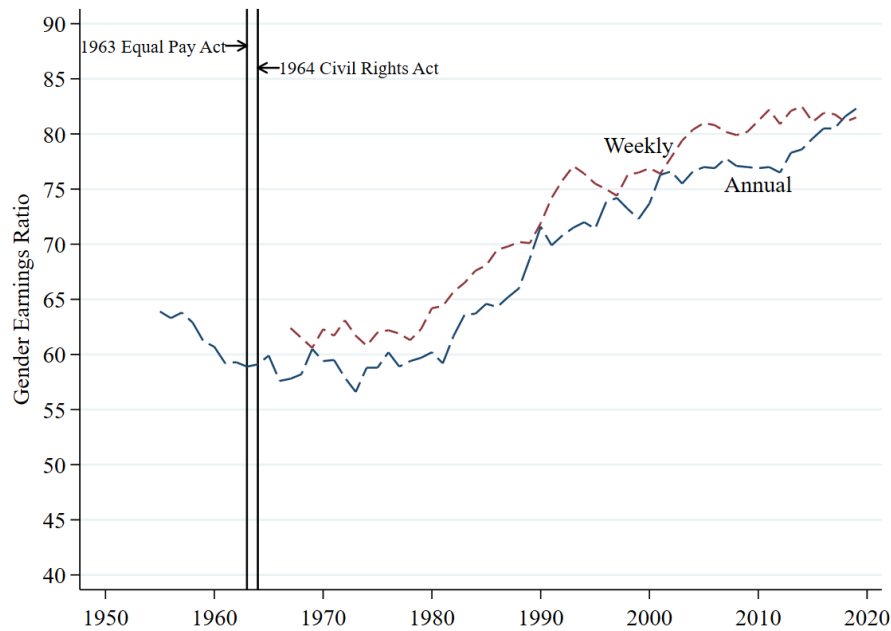

B. Census/CPS Estimates for Full-Time Workers with at least 27 Weeks of Work in the Previous Year
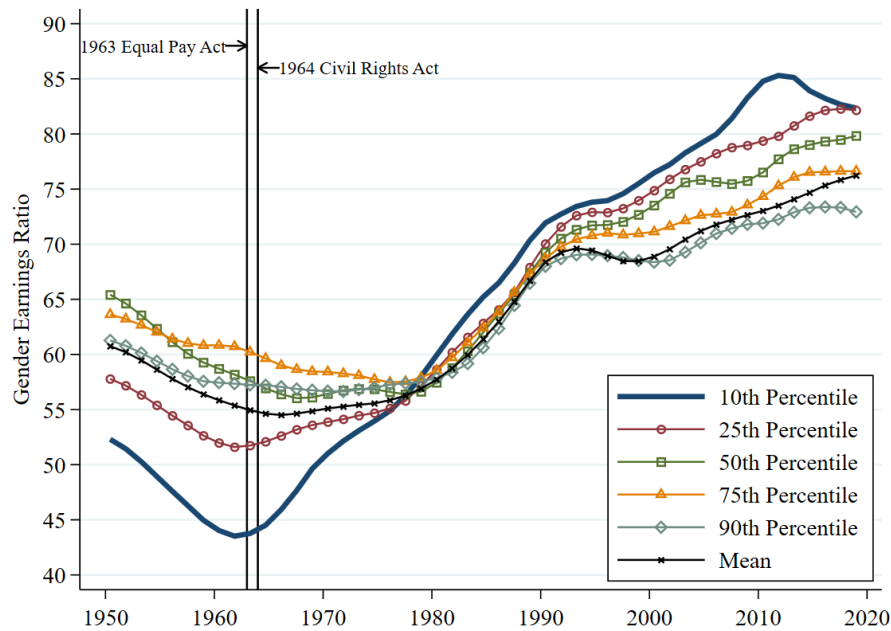
Notes: Panel A plots data on the ratio of median annual and weekly wage and salary earnings of full-time, full-year workers for women relative to men from the following sources: the Census Bureau's Consumer Income (P60) series for 1955 through 1960 (U.S. Census Bureau 1956, 1958a, b, 1960, 1961, 1962); the female-to-male annual earnings ratio for full-time, full-year workers from DeNavas-Walt and Proctor (2015) for 1961 through 2014; and Shrider et al. (2021) for 2015 through 2019. Data on the female-to-male ratio of usual weekly earnings for full time wage and salary workers come from Mellor (1984) for 1967 through 1978, the U.S. Department of Labor (2015) for 1979 through 2014; and Proctor, Semega, and Kollar (2016) and U.S. Department of Labor (2021) for 2015 through 2019. Panel B uses a sample of 25–64-year-old, full-time workers working at least 27 weeks in the previous year. We plot the gender earnings ratio at the *pth* percentile/mean by taking the ratio of the *pth* percentile/mean of the wage distribution for women over the *pth* percentile/mean of the wage distribution for men. Panel B sources include the 1950 and 1960 Decennial Censuses and the 1962 to 2020 ASEC (Flood et al. 2022, Ruggles et al. 2023). We linearly extrapolate values for earnings years 1950–1958 and 1960, when Census and CPS data are not available. We smooth the series using a local linear regression with a bandwidth of 2 years.

Figure 2. Map of State Equal Pay Laws as of 1963

Notes: The figure plots the 22 states with equal pay laws in the U.S. as of 1963 (dark blue) and those without such a law (U.S. Congress 1963). The states with equal pay laws in 1963 are Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Hawaii, Illinois, Maine, Massachusetts, Michigan, Montana, New Jersey, New Hampshire, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Washington, Wisconsin, and Wyoming. The year listed next to each state indicates the year when the state enacted its equal pay law. See also Neumark and Stock (2006).

Figure 3. The Evolution of Women's and Men's Weekly Wages in States with and without Pre-Existing Equal Pay Laws

A. Women

B. Men
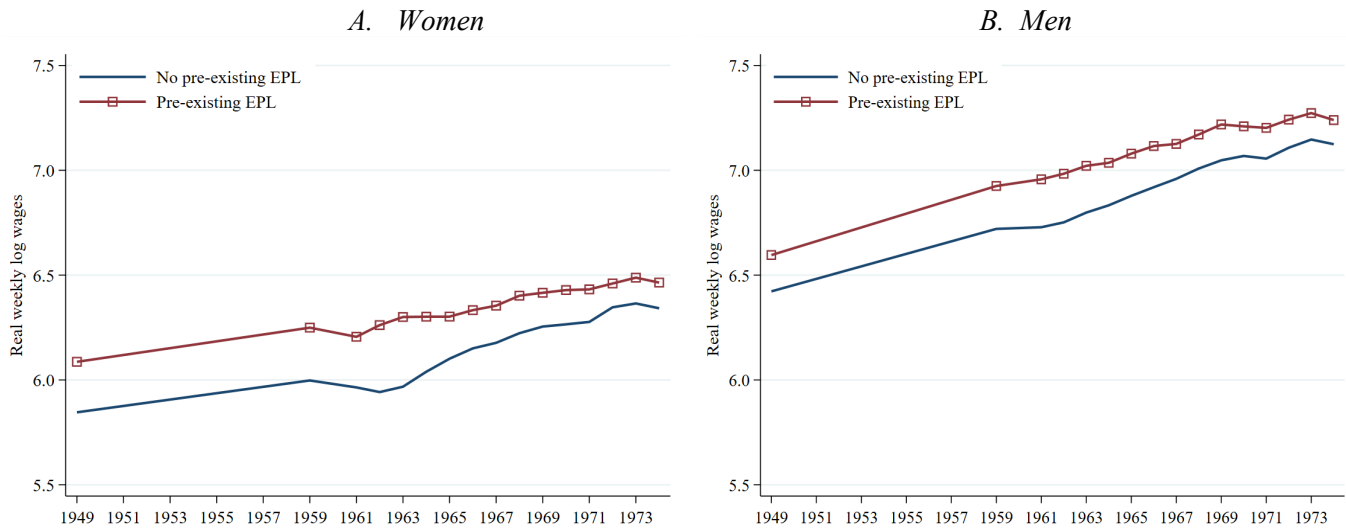
Notes: The figure plots the mean of log of weekly wages for women and men in state groups that did not have an equal pay law as of January 1, 1963, and state groups where at least one state did have such a law.
Sources: Authors' calculations using the 1% sample of the 1950 Decennial Census, 5% sample of the 1960 Decennial Census, and the 1962 to 1975 CPS ASEC (Flood et al. 2022, Ruggles et al. 2023). See text for details on sample selection and exclusion criteria.

Figure 4. The Effect of the Equal Pay Act and Title VII on Weekly Wages using Pre-Existing State Equal Pay Laws
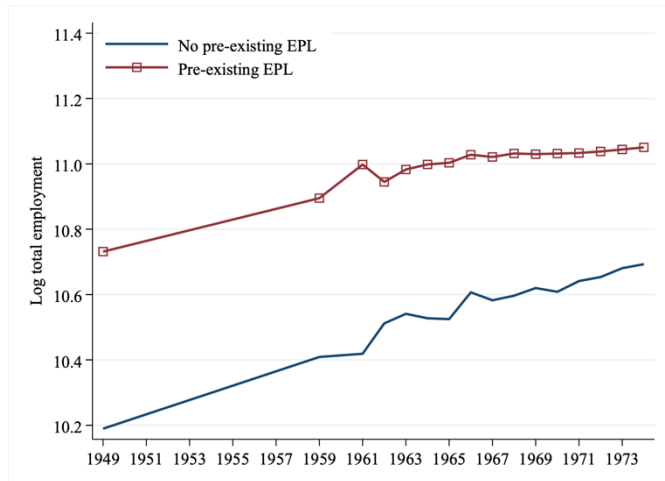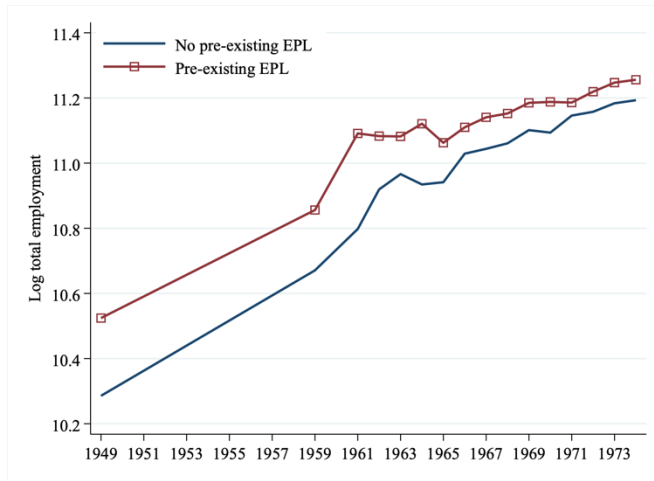
A. Women

B. Men
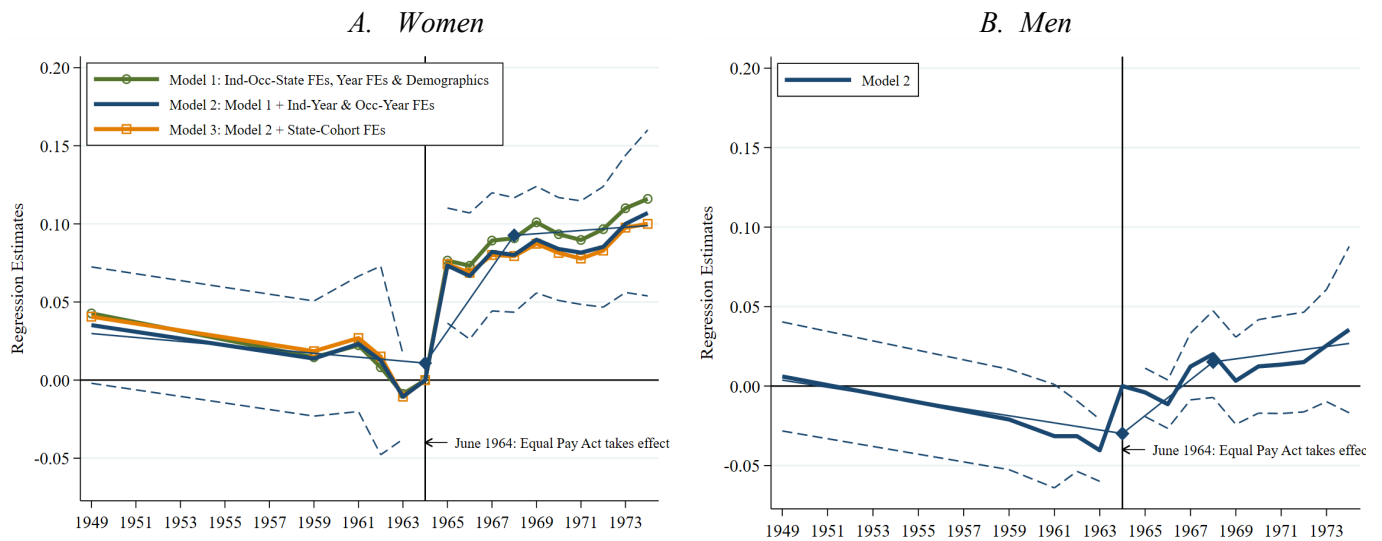
Notes: The figure plots the event-study coefficients from equation (1) as well as 95-percent, pointwise confidence intervals using standard errors that have been corrected for heteroskedasticity and an arbitrary correlation within state group (Huber 1967, White 1980, Arellano 1987). The spline specification is based on model 2 of equation (3).
Sources: See Figure 3.

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Figure 5. The Evolution of Women's and Men's Employment and Annual Hours in States with and without Pre-Existing Equal Pay Laws
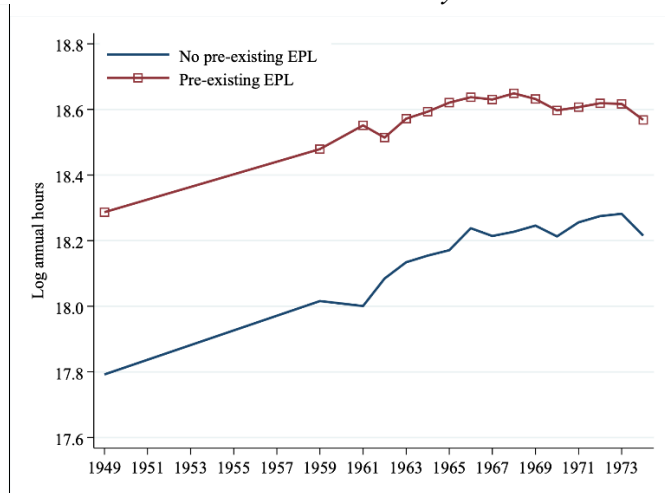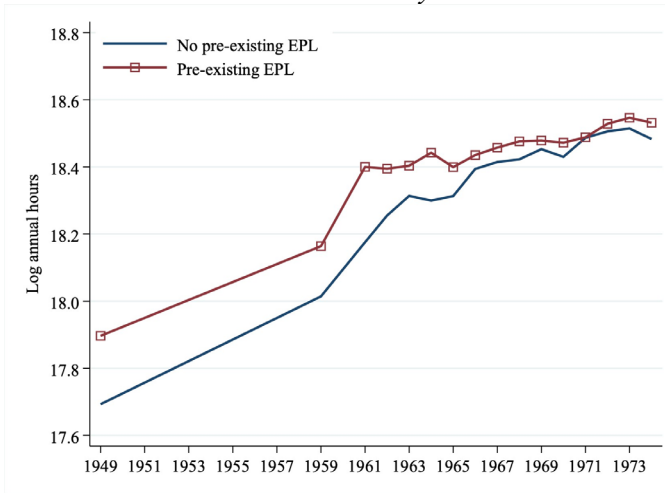
A. Female Employees

B. Male Employees


C. Annual Hours Worked by Women

D. Annual Hours Worked by Men

Notes: Panels A and B plot the mean of log sum of employees (total employment) within an industry-occupation-state-group job cell for women and men in state groups that did not have an equal pay law as of January 1, 1963, and state groups where at least one state did have such a law. Because the total counts are depressed in 1961-1962 and, to a lesser extent, in 1963-1964, due to issues around whether variables were included in the February CPS, we inflate employment by the inverse of the fraction of observations in each year coded as a February-March match. Panels C and D show analogous series for the mean of log annual hours worked, which are adjusted using the same inflation factor.
*Sources*: See Figure 3.

**Figure 6. The Effect of the Equal Pay Act and Title VII on Employment
using Pre-Existing State Equal Pay Laws**

A. Log Number of Employees   *B. Log Annual Hours Worked*
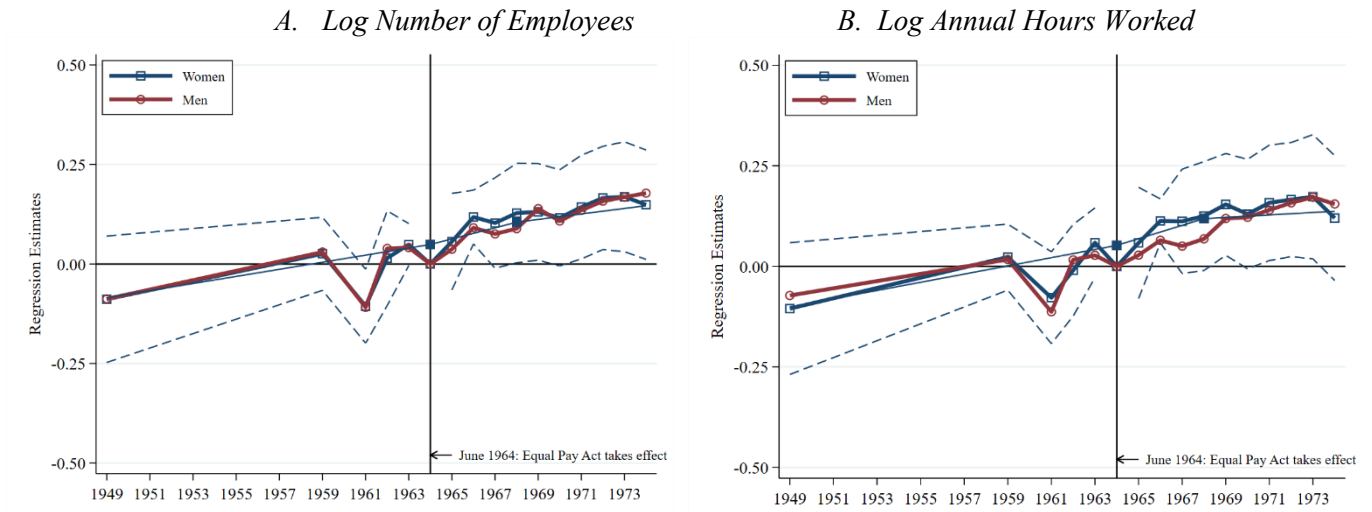
Notes: The figure plots the event-study coefficients from model 2 of equation (2). Dependent variables are indicated in subtitles. Dashed lines are 95-percent, pointwise confidence intervals for women, where standard errors have been corrected for heteroskedasticity and an arbitrary correlation within state group (Huber 1967, White 1980, Arellano 1987).
Sources: See Figure 3.

Figure 7. The Correlation of Women's Representation and Wages with the 1960 Gender Wage Gap, by Industry, Occupation, and State-Group Cell

A.   Share of Employees that are Women in 1960

B.   Women's Weekly Wages in 1960
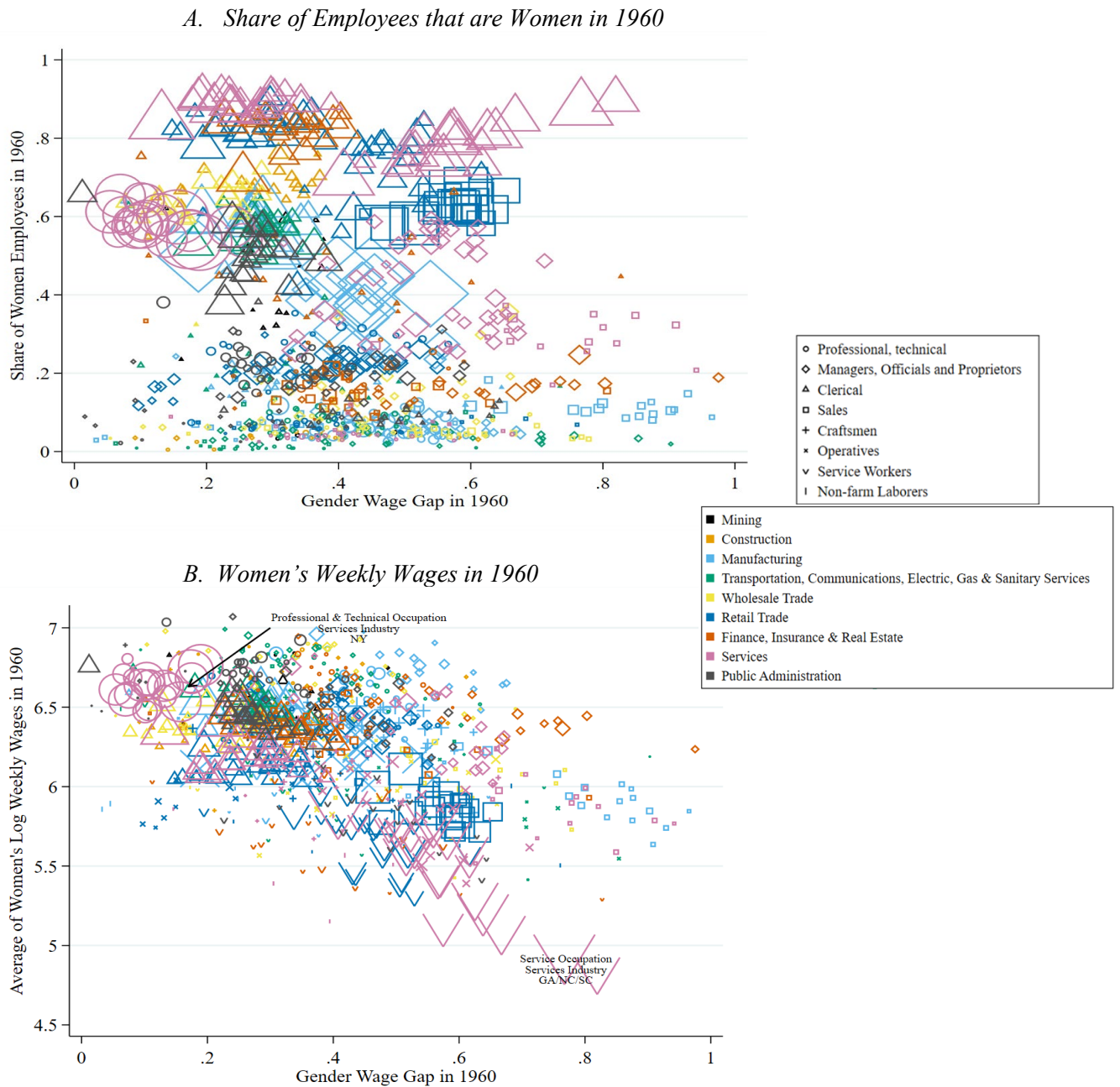
Notes: Each marker represents an industry-occupation-state-group job cell. The size of the marker represents the number of women working in the cell in 1960. The color of each marker captures the industry, and the marker shape captures the occupation as shown in the legend. The x-axis is the gender wage ratio (*Gap*), which is calculated as the difference in average log hourly wages for men and women working full time in 1960. The y-axis in panel A is the share of employees in each cell in the 1960 Census who are women and in panel B is the average log weekly wages for women in the 1960 Census.
Sources: 5% sample of the 1960 Decennial Census.

Figure 8. Correlation of Changes in Relative Wages and Employment and the Gender Gap in Wages, by Industry, Occupation, and State-Group Cell


Notes: Each marker represents the difference in outcomes between women and men for the industry-occupation-state-group cell. Panels A-C plot the outcomes from 1960 to 1970 against the 1960 gender wage gap, and panels D-F plot the outcomes for 1950 to 1960 against the 1950 gender wage gap. The size of each marker represents the number of women working in the cell in 1960 (panels A-C) or 1950 (panels D-F). Figures are limited to cells with variables in the indicated ranges, but regressions are estimated on all observations. The slope coefficient and heteroskedasticity-robust standard error are calculated using a bivariate regression of the outcome on the y-axis against the gender wage gap with weights equal to the number of women in each cell in 1960 (panels A-C) or 1950 (panels D-F). As described in the text, we use a split sample instrumental variable procedure or use the 1940 gender wage gap as an instrument for the 1960 gender wage gap.

Sources: Authors' calculations using full-count 1940 Decennial Census, the 1% sample of the 1950 Decennial Census, 5% sample of the 1960 Decennial Census, and the combined one-percent Form 1 and Form 2 state samples of the 1970 Decennial Census (Ruggles et al. 2021, Ruggles et al. 2023).

Figure 9. The Effect of the Equal Pay Act and Title VII on Weekly Wages using the 1960 Gender Wage Gap

A. Women's Weekly Wages
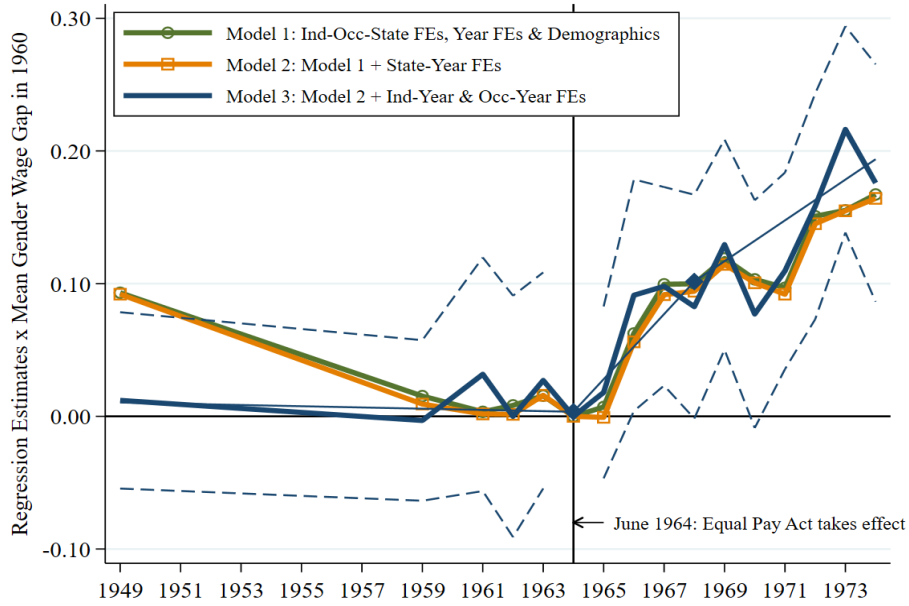
B. Men's Weekly Wages
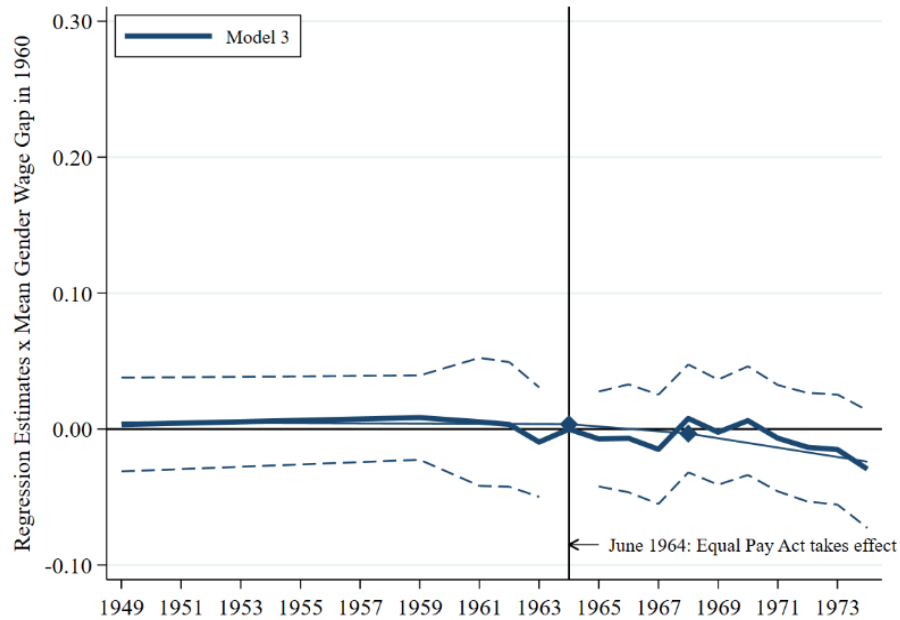
Notes: The figure plots the event-study coefficients from equation (4) as well as 95-percent, pointwise confidence intervals based on standard errors corrected for heteroskedasticity and an arbitrary correlation within industry-occupation-state-group (Huber 1967, White 1980, Arellano 1987). Dependent variables are indicated in subtitles. The solid thin lines correspond to model 3 spline estimates of equation (5). Point estimates and confidence intervals are multiplied by the average gender wage gap in the 1960 Census for the relevant sample of women (equal to 0.374).
Sources: See Figure 3.

Figure 10. The Effect of the Equal Pay Act and Title VII on the Distribution of Wages using the 1960 Gender Wage Gap

A. Women's Weekly Wages

B. Men's Weekly Wages
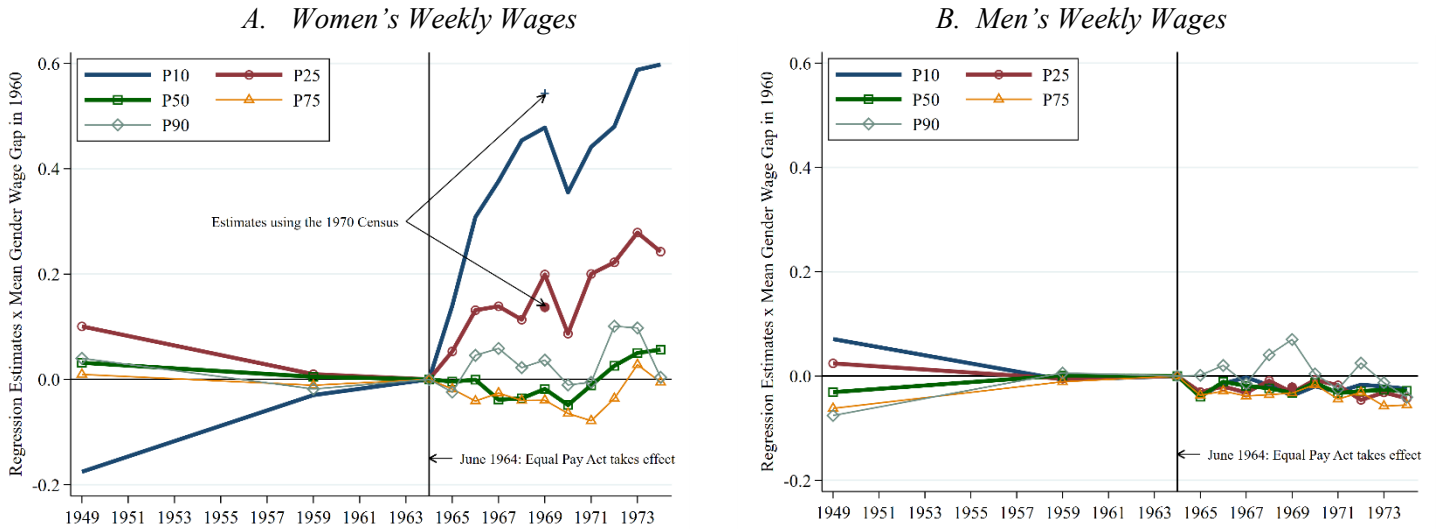
Notes: The figure plots estimates of model 3 of equation (4) where the dependent variable is the RIF for weekly log wages for women (panel A) and men (panel B). Because sample sizes are much smaller in the early ASEC years and because this is a demanding specification, we pool 1959 and 1962-1964 into a single event-study coefficient. Coefficients are scaled by the average gender wage gap (equal to 0.374). Estimates for the 1970 Census are shown for the 10th and 25th percentiles, from a regression estimated using only the 1950, 1960, and 1970 Censuses.
Sources: See Figure 3 notes and the combined one-percent Form 1 and Form 2 state samples of the 1970 Decennial Census.

Figure 11. The Effect of the Equal Pay Act and Title VII on Female Employment using the 1960 Gender Wage Gap

A. Log Number of Employees

B. Log Annual Hours Worked
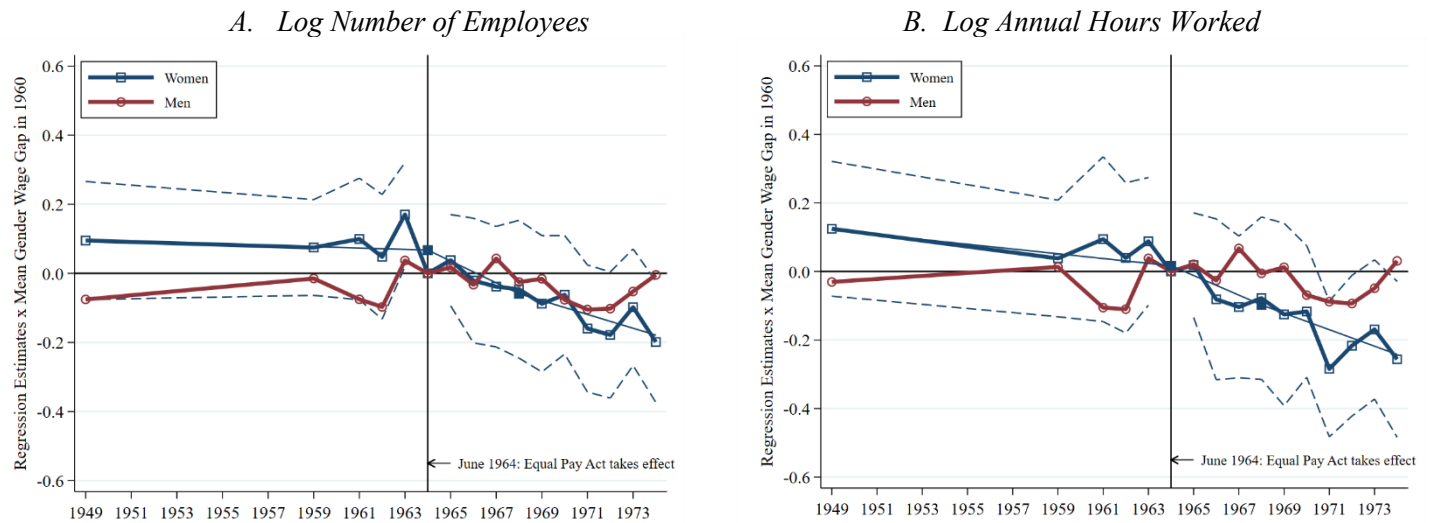
Notes: These figures plot the event-study coefficients from model 3 of equation (4) run on data aggregated at the industry-occupation-state-group-level. Dependent variables are indicated in subtitles. Point estimates and confidence intervals are multiplied by the average gender wage gap (equal to 0.374). Dashed lines are 95-percent, pointwise confidence intervals for women and based on standard errors corrected for heteroskedasticity and an arbitrary correlation within industry-occupation-state-group (Huber 1967, White 1980, Arellano 1987).
Sources: See Figure 3 notes.

Table 1. The Effects of the Equal Pay Act and Title VII on Wages and Employment using Pre-Existing State Equal Pay Laws

	(1)	(2)	(3)
			Women -
	Women	Men	Men
A. Log weekly wage			
Spline estimate in 1968	0.087	0.054	0.033
	(0.021)	(0.018)	(0.010)
p-value, wild cluster bootstrap	[0.000]	[0.006]	[0.006]
Trend-break in 1964	0.022	0.014	0.008
	(0.005)	(0.004)	(0.003)
Pre-trend slope, 1949-1964	-0.001	-0.002	0.001
	(0.001)	(0.001)	(0.001)
R-squared	0.398	0.331	0.501
Mean log wage in 1960, 2022 dollars	6.16	6.86	--
Mean wage in 1960, 2022 dollars	$595	$1,089	--
B. Log number of employees			
Spline estimate in 1968	0.020	-0.018	0.038
	(0.068)	(0.057)	(0.027)
p-value, wild cluster bootstrap	[0.784]	[0.796]	[0.166]
Trend-break in 1964	0.005	-0.005	0.010
	(0.017)	(0.014)	(0.007)
Pre-trend slope, 1949-1964	0.009	0.009	-0.000
	(0.005)	(0.006)	(0.003)
R-squared	0.982	0.987	0.986
Mean *nos* cell log number of employees in 1960	11.06	10.97	--
Mean *nos* cell number of employees in 1960	90,282	103,153	--
C. Log number of annual hours worked			
Spline estimate in 1968	0.026	0.003	0.023
	(0.069)	(0.059)	(0.025)
p-value, wild cluster bootstrap	[0.739]	[0.962]	[0.319]
Trend-break in 1964	0.006	0.001	0.006
	(0.017)	(0.015)	(0.006)
Pre-trend slope, 1949-1964	0.010	0.007	0.003
	(0.006)	(0.006)	(0.003)
R-squared	0.977	0.985	0.983
Mean *nos* cell log number of annual hours in 1960	18.38	18.59	--
Mean *nos* cell number of annual hours in 1960	132 M	202 M	--
Observations	800,345	1,561,633	2,361,978
Sex-Industry-Occupation-State-Year Cells	5,264	10,640	15,904

Notes: The table presents the spline estimates for model 2 as described in the text. Dependent variables are indicated in panel subtitles. In column 3, demographic controls and fixed effects are allowed to vary by sex. Standard errors in parentheses are corrected for heteroskedasticity and arbitrary correlation within state-group (Huber 1967, White 1980, Arellano 1987).Wild cluster bootstrap *p*-values using 499 replications are in brackets.
Sources: See Figure 3 notes

Table 2. The Effects of the Equal Pay Act and Title VII on Wages and Employment using 1960 Gender Wage Gaps

	(1)	(2)	(3)	(4)	(5)
				Equal Pay Law	
				State Law	No State Law
	Women	Men	Women - Men	Women - Men	Women - Men
A. Log weekly wage					
Spline estimate in 1968 at mean *Gap*	0.100	-0.007	0.107	0.060	0.162
	(0.023)	(0.011)	(0.025)	(0.039)	(0.034)
Trend-break in 1964	0.067	-0.004	0.071	0.041	0.103
	(0.015)	(0.008)	(0.017)	(0.027)	(0.022)
Pre-trend slope, 1949-1964	-0.001	-0.000	-0.001	0.007	-0.012
	(0.004)	(0.002)	(0.004)	(0.006)	(0.006)
R-squared	0.399	0.327	0.511	0.476	0.538
Mean log wage in 1960, 2022 dollars	6.17	6.89	--	--	--
Mean wage in 1960, 2022 dollars	$599	$1,114	--	--	--
B. Log number of employees					
Spline estimate in 1968 at mean *Gap*	-0.118	-0.062	-0.056	-0.009	-0.112
	(0.047)	(0.029)	(0.049)	(0.077)	(0.069)
Trend-break in 1964	-0.079	-0.041	-0.038	-0.006	-0.072
	(0.031)	(0.019)	(0.032)	(0.053)	(0.044)
Pre-trend slope, 1949-1964	-0.005	0.015	-0.020	-0.000	-0.033
	(0.011)	(0.005)	(0.011)	(0.014)	(0.020)
R-squared	0.989	0.991	0.990	0.991	0.989
Mean *nos* cell log number of employees in 1960	11.06	10.97	--	--	--
Mean *nos* cell number of employees in 1960	90,345	103,153	--	--	--
C. Log number of annual hours worked					
Spline estimate in 1968 at mean *Gap*	-0.087	-0.047	-0.039	-0.060	-0.046
	(0.052)	(0.030)	(0.054)	(0.095)	(0.081)
Trend-break in 1964	-0.058	-0.032	-0.026	-0.041	-0.030
	(0.034)	(0.020)	(0.036)	(0.065)	(0.052)
Pre-trend slope, 1949-1964	-0.019	0.008	-0.026	-0.003	-0.047
	(0.013)	(0.005)	(0.012)	(0.016)	(0.021)
R-squared	0.984	0.989	0.987	0.989	0.985
Mean *nos* cell log annual hours in 1960	18.38	18.59	--	--	--
Mean *nos* cell number of annual hours in 1960	132 M	202 M	--	--	--
Observations	797,272	1,362,199	2,159,471	1,435,264	724,204
Sex-Industry-Occupation-State-Year Cells	5,264	10,640	15,904	9,904	5,968

Notes: The table presents the spline estimates for model 3 of equation (5). The spline estimates and standard errors in 1968 are scaled by the mean gender gap in the 1960 Census (equal to 0.374). Columns 4 and 5 split the sample into state groups where at least one state had an equal pay law as of January 1, 1963, and state groups that did not (U.S. Congress 1963). We use separate values of the mean gender gap for these two columns (equal to 0.364 for column 4 and 0.392 for column 5). Standard errors are corrected for heteroskedasticity and an arbitrary correlation within industry-occupation-state-group (Huber 1967, White 1980, Arellano 1987).