

Falling Between the Cracks: Discrimination Laws and Older Women

Joanne Song McLaughlin*
University at Buffalo, SUNY
Department of Economics
jsmclaug@buffalo.edu

February 2020

Abstract: Theories and evidence suggest that older women may experience unique discrimination for being both old and female in the workplace. To provide a remedy for this type of discrimination – known as intersectional discrimination – legal scholars argue that age and sex discrimination laws must be used jointly and acknowledge intersectional discrimination (age-plus-sex or sex-plus-age discrimination) as a separate cause of action. Nonetheless, in general, courts have declined to do so even though older women are protected under both age and sex discrimination laws. This raises a concern that age discrimination laws may be ineffective, or less effective in protecting older women. I test this implication by estimating the differential effect of age discrimination laws on labor market outcomes between older women and older men. My findings show that age discrimination laws did far less to improve labor market outcomes for older women than for older men. These results may explain the persistent findings of discrimination against older women in the existing literature and support the legal scholars’ argument that older women’s intersectional discrimination must be recognized as a separate cause of action.

Keywords: older women, intersectional discrimination, age discrimination, sex discrimination, age-plus-sex, sex-plus-age, the Age Discrimination in Employment Act of 1967, Title VII of the Civil Rights Act of 1964.

* I am indebted to David Neumark who provided valuable guidance and encouragement during the initial stages of this work. I thank two anonymous referees for helpful suggestions. I am grateful to Scott Barkowski, Marianne Bitler, Jan Brueckner, Yingying Dong, and Catherine Fisk for their feedback on an earlier version of this project. I also thank Peter Hinrichs, Robert Pollak, and participants at AARP ADEA at 50 Symposium, Conference on Empirical Legal Studies, Population Association of America Annual Meeting, UCI applied economics seminar, Western Empirical Legal Scholars Conference, and All-CA Labor Economics Conference poster session for their valuable comments. All errors and conclusions are solely mine.

1. Introduction

Everyone has a right to an equal opportunity in the workplace. To protect this right, policymakers enacted anti-discrimination laws beginning in the 1960s that make discrimination in the workplace illegal. There are numerous laws to provide this protection both at the federal and state level. The Age Discrimination in Employment Act of 1967 (ADEA) and Title VII of the Civil Rights Act of 1964 (Title VII) are part of the collection of these laws. These discrimination laws, although independent, have the exact same goal – provide equal employment opportunities. However, despite these efforts to eliminate discrimination in the workplace, a troubling reality is that illegal discrimination is still pervasive. This article examines the effectiveness of laws on one particular vulnerable population – older women – who may face unique discrimination for being both old *and* female simultaneously. This type of discrimination that occurs at the intersectionality of two or more demographic characteristics (i.e., age and gender) is known as intersectional discrimination (also known as age-plus-sex or sex-plus-age discrimination). It is difficult for older women to prove their claims of intersectional discrimination if they are not allowed to invoke a claim based on this intersectionality. Older women are protected under age discrimination laws and sex discrimination laws, but both laws must be used jointly to prove their intersectional discrimination claims. However, the reality is that combining independent statutes is not generally allowed in courts; and courts do not usually allow older women to make a claim based on both age and gender but rather based on only one dimension (i.e., age discrimination *or* gender discrimination). This restriction makes intersectional discrimination cases difficult to prove in court and raises concerns for the effectiveness of the laws for older women.

Why is it critical to recognize older women’s discrimination as intersectional discrimination? To illustrate this point, I use a hypothetical example presented in Table 1. Table 1 begins with a workforce that consists of five old women, five young women, five old men, and five young men; and it further shows that the firm discharged three old women, but only one from each remaining group. If the older women are allowed to bring their claims as an intersectional claim, they can demonstrate that the discharge rate that is 40 percentage points higher than that of the other three groups. However, if older

women are not allowed to bring their claims as an intersectional claim and only allowed to bring their claim based solely on age discrimination or gender discrimination, then they must compare their discharge rate to all young workers or all male workers. Consequently, they can only show that their disproportionate discharge rate is 20 percentage points higher than younger workers or male workers. The significance of this example is that the strength of evidence is reduced drastically and it may become much more difficult to prove if older women's discharge rate is based on only one dimension – either age or gender.¹ Under the current application of the law, paradoxically, this example also shows that older men and young women could, in fact, use these statistics to allege that they were discriminated against, although their discharge rate was not disproportionately higher than older women.

While courts do recognize the type of challenge illustrated above, they generally have declined to accept older women's intersectional discrimination claims as a separate cause of action because the federal anti-discrimination laws that govern age discrimination (the ADEA) and gender discrimination (Title VII) are two separate statutes. The courts' interpretation has been that Congress passed the ADEA to prohibit age discrimination as a separate statute to provide an entirely different basis for relief instead of including an age category as part of Title VII.² Therefore, Congress did not intend to allow “mix and match theories of liability for discrimination” under different statutes and that recognition of older women's intersectional discrimination would amount to judicial legislation.³ On few occasions, courts have accepted sex-plus discrimination under Title VII, but courts have not accepted age-plus under the ADEA in the past.⁴ Unfortunately, many states follow the federal counterpart of the discrimination laws

¹ This is just an example of limitation in proving older women's intersectional discrimination. For other limitations involving disparate impact as well as disparate treatments cases, see McLaughlin (2019).

² This distinction between Title VII and the ADEA was also highlighted by the U.S. Supreme Court in *Gross vs. FBL Financial Services* in 2009.

³ See court's opinion in *Luce v. Dalton*, 166 F.R.D. 457. See also *Kelly v. Drexel Univ.*, 907 F. Supp. 864.

⁴ Intersectional discrimination claims based on age and sex simultaneously can be classified as either age-plus-sex or sex-plus-age. In theory, age-plus-sex discrimination is a form of age discrimination and sex-plus-age is a form of gender discrimination. Courts always have declined to recognize age-plus-sex as a separate cause of action under the ADEA, but some lower courts have recognized sex-plus-age under Title VII. See *Thompson v. Miss. State Pers. Bd.*, 674 F.Supp. 198 (N.D. Miss. 1987); *Murdock v. B.F. Goodrich*, 1992 Ohio App. LEXIS 6611 (Ohio Ct. App. Dec. 30, 1992); *Sherman v. Am. Cyanamid Co.*, 1999 U.S. App. LEXIS 21086 (6th Cir. Sept. 1, 1999); *Arnett v. Aspin*, 846 F.Supp. 1234 (E.D. Pa. 1994). These cases are discussed more in the following section. Also see McLaughlin (2019) for distinction between how courts view age-plus-sex and sex-plus-age discrimination claims.

to interpret their version of discrimination laws even though they have only one statute that governs all types of illegal discrimination in employment.⁵

This legal peculiarity potentially limits older women's remedies in court and has the important implication that the age discrimination laws may be ineffective, or less effective, for older women. The objective of this paper is to test this hypothesis by estimating the differential effect of age discrimination laws between older men's and older women's employment outcomes. Previous studies have shown that age discrimination laws were effective in increasing employment of older male workers (Neumark and Stock, 1999; Adams, 2004). However, these studies have not fully considered the legal incongruity or the effectiveness of age discrimination laws for populations susceptible to intersectional discrimination because they restricted their analysis to men only. Therefore, studying the effect of age discrimination laws separately by older men and older women is necessary to fully understand the impact of these laws.

Existing literature from various fields suggest pervasive intersectional discrimination against older women in the labor market. Neumark et al. (2019) show direct and compelling evidence of age discrimination against older women in hiring using a large-scale field experiment where they sent out resumes to real job openings. They found robust evidence of age discrimination against older women, however, interestingly, they found much weaker and less robust evidence against older men.⁶ Other field experiments (Lahey, 2008a; Farber et al., 2016, 2017, 2019) also found evidence of age discrimination

⁵ For example, the Arizona Civil Rights Act has one statute that governs discrimination against race, color, religion, sex, age or national origin or on the basis of disability, but Arizona courts look to federal standards when considering claims. *See Matos v. City of Phoenix*, 176 Ariz. 125. Alabama has a separate statute that governs age discrimination and uses the federal ADEA standards as its guide. The Idaho Supreme Court also ruled that the federal law guides the Idaho court's interpretation of the Idaho Human Rights Act. *See Hatheway v. Bd. of Regents of the Univ. of Idaho*. Pennsylvania court also ruled that the Pennsylvania Human Relations Act has an identical interpretation with the parallel federal anti-discrimination law. *See, e.g., Sharp v. Penske Buick GMC, Inc.*, 686 F.Supp.2d 530 (E.D. Pa. 2010).

⁶ Neumark et al. (2019) find differential call back rates for older men, but when they correct for bias that may be driven by the variance of unobservable determinants, their results for men disappear. In the context of Sweden, Carlsson and Eriksson (forthcoming) conducted a similar resume correspondence study and also show that the decline in the callback rate for job interview by age is steeper for women than for men. This is another piece of evidence that shows that older women face more discrimination than older men in hiring. However, Baert et al. (2016) did not find any gender difference in age discrimination in Belgium. Also, Baert et al. were not able to conduct Neumark's (2012) robustness test that addresses the possibility that the variance of unobservable determinants of the call back may differ between younger and older applicants due to the limited information they collected.

against older women, although these studies did not test for gender differences as their sample was restricted to women.⁷ In Table 2, I show means of weeks unemployed between 1962 and 1967 by gender and age using the Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS) (also known as the “March CPS”).⁸ These statistics show that for older women who were seeking jobs, the mean duration of unemployment was much longer for those who are 50 years old or older compared to men of the same age. Although these statistics cannot demonstrate that there was more discrimination against older women, they are certainly consistent with evidence of older women’s intersectional discrimination.

There are a few theories that may explain employers’ differential treatment against older women. First, attractiveness matters in the workplace (Hamermesh and Biddle, 1994; Biddle and Hamermesh, 1998, Hamermesh and Parker, 2005).⁹ Second, attractiveness matters more for women (Jackson, 1992). Third, the negative relationship between age and physical appearance is more predominant for women (Korthase and Trenholme, 1982; Henss, 1991; Bazzini et al, 1997; Berman, O’Nan and Floyd, 1981). These theories could collectively explain why employers may have differential adverse treatment against older women that may be different from older men.

The evidence on discrimination against older women and their severely limited legal recourse in practice imply that the ADEA and state age discrimination laws are less effective or even ineffective in improving labor market outcomes for older women. To test this hypothesis, I use the variations in both state and federal age discrimination laws using the CPS ASEC from 1963 to 1971. I estimate the differential effect of age discrimination laws on employment, retirement, and unemployment rate between older men and older women. My results indicate that age discrimination laws did far less to improve both

⁷ In studying age discrimination, Lahey (2008a) restricted the sample to women because time out of labor force is less likely to signal negative unobservable productivity. For Farber et al. (2016, 2017, 2019), their main objective was to study the impact of unemployment duration on call back rate. All four studies restrict their sample to women, thus they do not test for gender differences in the call back rate.

⁸ One of the main reasons to enact the ADEA was to address this type of higher rate of long term unemployment rate of older workers (29 USCS § 621 (LexisNexis 2018); U.S. Department of Labor, 1965).

⁹ Although these studies did not disentangle whether the preferable labor market outcomes for more attractive workers was due to productivity or discrimination, they all clearly showed more attractive workers have higher earnings.

employment and retirement for older women than for older men. In some cases, I find no evidence that age discrimination laws affected labor market outcomes for older women. I also conduct various tests to explore alternative explanations. One important robustness test is restricting sample to unmarried individuals whose labor force participation decision is not based on a dual-earner model to attempt to disentangle the effect of voluntary labor force exit from discrimination.¹⁰ For example, if older men, who are more likely to be married to older women, can stay in the workforce longer due to age discrimination laws, then older women who are often secondary earners within the household may choose to leave the labor force earlier. All my results are robust and consistently support the legal scholars' argument that to provide adequate protection for older women, the laws must allow older women to bring their claim as an intersectional discrimination claim, allowing them to be classified as a subgroup within the protected classes.

Knowing whether the age discrimination laws are effective in providing equal employment opportunities for older women is important for at least two reasons. First, we expect to see continued decline in the ratio of workers to retired individuals in the near future as the population ages. This increase in dependency ratio poses a serious Social Security solvency issue, and to address this challenge, policymakers have passed public policies that create incentives for older workers to lengthen their work lives.¹¹ However, the effort to extend employment of older workers may be hindered if firms discriminate against older workers in the workplace (Neumark and Song 2013). This implies that having effective age discrimination laws may contribute to addressing the Social Security solvency issue. Second, the labor force participation rate of older women has increased significantly in the last few decades and older women now consist of a significant portion of the entire workforce. Figure 2 shows that more than one third of the women's labor force participation comes from women age 50 or older and this share continues to grow. Furthermore, Maestas and Zissimopoulos (2010) and Maestas (2018) argue that older

¹⁰ Since single women are not representative of all women, I perform this as a robustness check instead of main analysis.

¹¹ The 1983 Social Security reform increased the Full Retirement Age (FRA) to create an incentive to increase older adult employment.

women experience higher incentives for continued work that is tied to potential higher Social Security benefits. The rise in labor force participation rate of women at younger ages imply that women are entitled to Social Security benefits based on their own earnings history, which can be higher than the 50 percent of their husbands' benefits if they continue to work longer. The policy implications of older women's remedies against intersectional discrimination are also significant given that poverty rate is higher among older women, especially widows. Sandall and Iams (1997) document that elderly poverty is concentrated among older women as many older women depend upon their husband's employment or Social Security and pension benefits, all of which decrease drastically upon the death of their husband. These trends indicate that understanding the impact of public policies that protect equal employment for older women is critical to improve the economic well-being of older women.

This study also contributes more broadly to intersectional discrimination research in general that is beyond age and gender. Experimental research studies on labor market discrimination often restrict the sample to one domain (e.g., men only, white only) to implement a cleaner research design. Consequently, evidence of labor market discrimination is limited to one demographic domain, though intersectional discrimination in the workplace may be more pervasive.¹² However, a limited legal recourse I have discussed so far also applies to other types of intersectionality such as age-plus-disability intersectionality — which is also germane to older workers because older workers experience a higher rate of disability. The Americans with Disabilities Act (ADA) that prohibits discrimination based on a disability status is a separate statute from the ADEA, and to be protected against age-plus-disability intersectional discrimination, both the ADEA and the ADA are must be used jointly. Therefore, the courts' rationale on age-plus-sex disability discrimination analogously applies to age-plus-disability discrimination and the legal recourse for older workers at the intersection of age and disability is also restricted. While it seems

¹² A rare exception to this limited research includes Lahey and Oxley (2018) in which they report lab experiment results showing a strong intersectionality between age and race in hiring decisions. They further make a strong point that their findings are early evidence of the need for more research on overall intersectional discrimination in the labor market. Ameri et al. (2018) document evidence of hiring discrimination against disabled workers, but limit their study to men only. Pedulla (2014) demonstrates and argues that the interaction between marginalized social identities is complex and does not necessarily produce double disadvantage.

clear that when workers experience intersectional discrimination, courts must allow plaintiffs to invoke an intersectional discrimination claim, after the U.S. Supreme Court's ruling in *Gross v. FBL Financial Service, Inc.*, that possibility has become even more unlikely. In *Gross*, the U.S. Supreme Court highlighted that the ADEA and Title VII are independent statutes and made the distinction between the two statutes even more pronounced. Consequently, the U.S. Supreme Court imposed a higher standard of the burden of proof for older workers age discrimination claims than Title VII. They ruled that older workers must prove that age was a deterministic factor in their employer's adversary employment decision and does not allow proof based on a mixed-motive. The implication of this decision on older women's intersectional discrimination is that it will be even harder to bring age-plus-sex discrimination claims under the ADEA in the future (Button 2018; Day 2014; McLaughlin 2019).

2. Background on Age Discrimination Laws and Intersectional Discrimination

The federal government enacted the ADEA in response to arbitrary age limits employers imposed in hiring that coincided with a much larger share of long-term unemployment for older workers in the 1960s. The government was concerned about the costs of unemployment insurance and lost production in the economy (U.S. Department of Labor, 1965). The age discrimination laws would be considered effective if they increased employment of older workers either through higher hiring rates or lower layoff rates (higher retention) of older workers. In general, the hiring effect of antidiscrimination laws is ambiguous because employers may respond to these laws by not hiring job seekers in the protected groups to avoid potential litigation in the future. However, there is an unambiguous prediction that these laws increase retention rates because these laws protect workers who are already working against arbitrary discrimination in discharge. Furthermore, it would be more difficult for job applicants to file a claim and prove discriminatory hiring compared to discriminatory discharge due to limited information available to job applicants about the hiring decisions of the employers.

This study is the first to examine the gender difference in the effect of the age discrimination laws on labor market outcomes of older workers. Neumark and Stock (1999) and Adams (2004) studied the

effects of the state age discrimination laws and the ADEA on men and found that age discrimination laws increased employment rates for older male workers protected under these laws. They found more pronounced positive effects for male workers aged 60 or older. Adams (2004) suggests that the increase in employment came from a lower retirement rate rather than an increase in hiring rate. Because of data limitations, Adams concluded that his hiring rate results are inconclusive. Both of these studies limit their sample to men only, thus we learn nothing about the gender difference in the effectiveness of age discrimination laws.

Using a different identification strategy, Lahey (2008b) found that stronger enforcement of age discrimination laws had negative effects on labor market outcomes for men. Specifically, she exploited the variations in the statute of limitations that allowed for a longer filing period with the enforcement agency (i.e., state Fair Employment Practices (FEP) or Equal Employment Opportunity Commission (EEOC)). Her results show that, for men, stronger enforcement lowered hiring, working hours, and labor force participation rate, and increased unemployment. These negative effects for men seem to suggest that there were important unintended consequences driven by firms' decisions to avoid litigation. However, importantly, Lahey did not find any effects for old women. In other words, irrespective of the direction of the effect, the impact of laws were weaker for women, which is consistent with the theory on intersectional discrimination.¹³

Neumark and Song (2013) examined whether the age discrimination laws enhanced the effect of the Social Security reforms that were intended to lengthen the employment of older workers. They found that the older male workers who live in states with stronger age discrimination laws and were affected by the increases in the Full Retirement Age (FRA) delayed their claims and stayed employed longer. However, they restricted their sample to men only. Neumark, Song, and Button (2017) tested to see if discrimination laws had a negative impact on hiring of older workers. They did not find any evidence of such unintended consequences, but their findings are also limited to men only. The studies that look at

¹³ Her negative effects of the laws are not directly comparable to Neumark and Stock or Adams since her results are the effect of enforcement rather than the enactment of age discrimination laws.

men and women separately often find two different results for each gender. Neumark and Button (2014), in general, do not find that stronger age discrimination laws helped older workers during the Great Recession or during the recovery of the Great Recession, but their findings are often opposite for women. Neumark et al. (2019) find evidence of age discrimination against older women and the role of age discrimination laws in a field experiment. Their results further suggest that, although older women face more discrimination, the effect of the stronger state laws (i.e., state laws that provide larger damages for plaintiffs) was weaker for older women.

As I discussed above in Section I, evidence from field experiments and theory all suggest that older women may experience unique discrimination based on age and gender. Nonetheless, it is unclear from case laws whether antidiscrimination laws provide adequate protection against such discrimination. In general, in order for older women to prove their intersectional discrimination, they must be allowed to compare their group difference to either younger women or older men. This invokes either sex-plus-age or age-plus-sex cause of actions.¹⁴ However, the decisions and opinions on intersectional discrimination cases involving gender and age are mixed. To date, courts have declined to accept age-plus-sex discrimination under the ADEA and they have mixed decisions under Title VII. *Thomas v. Mississippi State Personnel Board*, *Murdock v. B.F. Goodrich*, and *Sherman v. American Cyanamid Company*¹⁵ are some examples of cases where the court refused to recognize the older women's claims as intersectional discrimination claims. In *Thomas*, the older woman plaintiff provided evidence of educational requirements having a disparate impact on older women.¹⁶ However, the court refused to acknowledge older women as a separate protected subgroup and held that the plaintiff's evidence failed to show age or gender discrimination. In *Murdock*, the court held that older women are not a separate protected class

¹⁴ McLaughlin (2019) for detailed discussion of how older women's intersectional discrimination claims are treated, the significance of recognizing older women's claims as either sex-plus-age or age-plus-sex claims, difference between sex-plus and age-plus, case laws, and the implications. See also footnote 2.

¹⁵ 674 F. Supp. 198 (N.D. Miss. 1987); 1992 Ohio App. LEXIS 6611 (Dec. 30, 1992); 1999 U.S. App. LEXIS 21086 (6th Cir. 1999)

¹⁶ Disparate impact refers to employment requirements having a disproportionately adverse effect on protected classes. Although these requirements seem to be neutral such as educational requirements, it is against the law to have employment practices that have a disparate impact on protected classes. See McLaughlin (2019).

under state or federal law and decided that proof of age discrimination against older women was insufficient to show age discrimination. Similarly, in *Sherman*, the U.S. Sixth Circuit Court of Appeals declined to recognize the plaintiff's claim as intersectional discrimination because neither a federal appeals court nor the Supreme Court has recognized older women's intersectional discrimination as a cause of action in the past.

Under Title VII, on rare occasions, courts have ruled in favor of subgroup of women within a protected class. This is interesting because these rulings indicate how important it is to recognize older women's claims as intersectional discrimination cases in courts. In *Arnett v. Aspin*¹⁷ in 1994, the first case that recognized a sex-plus-age claim of older women, the plaintiff argued that she was discriminated against in promotion opportunities for being female and old. The court allowed the plaintiff to pursue her claim as a sex-plus-immutable characteristic case under Title VII. The court opined that this is necessary to close a loophole that may allow employers to discriminate against a subgroup of women. An earlier case that recognized race and gender intersectional discrimination against a black woman is *Jefferies v. Harris County Community Action Association* in 1980.¹⁸ On appeal, the U.S. Fifth Circuit Court of Appeals reversed the lower court's decision and held that the court must consider the case as intersectional discrimination to provide adequate protection for black women.¹⁹ The court's justification was that if both black men and white women are considered to be within the same protected class as black women, black women cannot prove discrimination that is directed only toward them. Consequently, no remedy will exist for discrimination against black women if they are not protected as a subgroup. This is precisely the argument for recognizing older women's intersectional discrimination as a separate cause of action in the previous section. Another important point to emphasize is that all cases that recognized intersectional discrimination claims were under Title VII and no such cause of action has been recognized under the ADEA, even though courts are aware of the importance of this issue.

¹⁷ 846 F. Supp. 1234, 1238 (E.D. Pa. 1994)

¹⁸ 425 F. Supp. 1208, 1213-15 (S.D. Tex. 1977)

¹⁹ 615 F.2d 1025

3. Research Design, Data, and Estimation Approach

3.1. Research Design and Data

This study relies on two identification strategies to test the differential effect of age discrimination laws between older women and older men. The first identification strategy uses time-series variations in state-level age discrimination laws across states in the mid-1960s (see Figure 1) and the second identification uses the enactment of the federal ADEA in 1967. I refer to the first identification strategy as a “state experiment” and the second one as a “federal experiment.” Since the federal experiment exploits the age discrimination law implemented at the federal level, the main advantage of using two different identifications strategies is that comparison of two results allows me to test whether the state experiment results were driven by policy endogeneity, which I discuss more later.²⁰

I use the CPS ASEC from 1963 to 1971, which corresponds to the period with substantial variation in state age discrimination laws shown in Figure 1 and the enactment of the ADEA.²¹ I merge the CPS ASEC data with the state age discrimination laws, which come from Neumark and Stock (1999) and Adams (2004). Under the state experiment, I use the states that enacted state age discrimination laws in 1965 as the treatment states and the remaining states serve as control states. The sample period for the state experiment is from 1964 to 1967 during which all the states are uniquely identified in the CPS ASEC. Idaho, Indiana, Maine, Michigan, and North Dakota first enacted state age discrimination laws in 1965, and Massachusetts expanded the age coverage range from the age group 45-65 to 40-65 year olds.

My federal experiment uses the enactment of the federal ADEA in 1967. The federal experiment strategy can be viewed as a “reverse experiment” because the treatment states are those that did not have state age discrimination laws and the control states are those that already had state age discrimination laws prior to the enactment of the federal ADEA. Since the federal ADEA is implemented at the federal level, we are less concerned that some states were predisposed to pass age discrimination laws as a

²⁰ My identification strategy is similar to the ones used in Neumark and Stock (1999) and Adams (2004). It is different from Lahey (2008b) where she exploits the variation in enforcement.

²¹ The CPS ASEC is extracted using CPS utilities produced by Unicon Research Corporation.

response to concerns for older worker's labor market conditions. For the federal experiment, I limit the data to three years before and after the enactment of the ADEA to estimate the effect of the legislation. The sample period covered is from 1966 to 1971 because the ADEA was not in effect until 180 days after December 15, 1967. During this sample period, not all states are uniquely identifiable in CPS. Only the District of Columbia, California, Connecticut, Florida, Illinois, Indiana, New Jersey, New York, Ohio, Pennsylvania, and Texas are uniquely identified between 1968 and 1972.²² Among these states, the District of Columbia, Florida, Illinois, and Texas did not have state age discrimination laws before the federal ADEA. Therefore, the treatment group that is used to identify the effect of the ADEA consists of these four states. The control group consists of the remaining seven identifiable states that already had state age discrimination laws. During the sample period, California covered only workers between ages 40 and 64, and Pennsylvania covered only workers between ages 40 and 62 before the ADEA. Since the ADEA covered workers between ages 40 and 65, the additional variations in age limitation in California and Pennsylvania are also used to identify the effect of the ADEA.

In all my analysis, I restrict the samples to white workers 18 or older to avoid issues related to racial discrimination in employment.²³ The labor market outcomes I examine are employment, retirement, and unemployment. Following the conventional definition, my unemployment variable excludes the individuals who are not in the labor force.

Table 3 reports descriptive statistics for each experiment separately. It shows that the samples are similar under both strategies. The employment rate is about 60 percent and both retirement and unemployment rate are about 3-4 percent in my sample. For unemployment regression that excludes individuals not in the labor force, the proportion of females is about 35 percent, which is much lower than employment or retirement regressions as we expected.

3.2. Empirical Model

²² Because of this limitation, I cannot pool the state and federal experiments to gain efficiency.

²³ Lahey and Oxley (2018) show an interaction between race by age discrimination in job application screening.

The empirical model to test the differential effect of the age discrimination laws between older women and older men is based on the difference-in-difference-in-differences (DDD) model that uses the variation in state age discrimination laws over time and age restrictions. Specifically, I implement the following model:

$$Y_{ist} = \alpha + \beta LAW_{st} \cdot PTD_{ist} + \gamma A_{ist} + \pi S_s + \rho T_t + \delta S_s \cdot T_t + \phi A_{ist} \cdot S_s + \mu A_{ist} \cdot T_t + \varphi X_{ist} + \xi_{ist}, \quad (1)$$

where Y_{ist} is a labor market outcome of interest for individual i in state s at time t . LAW_{st} is a dummy variable equal to one if the respondent is in a state that has an age discrimination law in effect and PTD_{ist} is a dummy variable equal to one if the respondent is within an age group protected by age discrimination laws. S_s is a vector of state dummy variables, T_t is a vector of year dummy variables and A_{ist} is a vector of age group dummy variables denoting different age groups.²⁴ The year dummy variables control for year-specific shocks common to all states in any given year, and state dummy variables control for time-invariant state-specific differences, and age group dummy variable controls for any difference in age. X_{ist} is a vector of individual level demographic controls that includes Standard Metropolitan Statistical Area (SMSA) status, marital status, and education level. The SMSA status is a vector of dummy variables indicating whether an individual lives in a central city, boundary, or non-metropolitan area. The marital status is a set of dummy variables for separated or divorced, never married, and widowed. The education level is a set of dummy variables for high school, some college, and college.

The identification strategy for the DDD estimator is compelling because the specification includes a full set of two-way interaction terms of state, year, and age dummy variables. These control for unobserved shocks to outcomes that coincide with the adoption of age discrimination laws that affect labor market outcomes. The age-state interactions control for any arbitrary changes for each age group by state, and age-year interactions remove biases common to all workers of a particular age in a given year.²⁵ Adding state-year interactions addresses the concern of biases that arise from any economic shocks that

²⁴ These age group dummy variables denote age categories of 18-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, and 70 or older.

²⁵ For example, age-year fixed effect will control for lagged Equal Pay Act of 1963 since this law affects both older and younger workers (see Neumark and Stock 2006).

are specific to each state over time (i.e., time-varying factors).²⁶ With this specification, the DDD estimator, β captures the effect of the age discrimination laws. In all my specifications, I cluster the standard errors at the state level (Bertrand et al., 2004). Although my approach is similar to that used by Neumark and Stock (1999) and Adams (2004), I improve on their methods by having a very flexible model. Specifically, Neumark and Stock do not have any specification with age-state year fixed effects and Adams (2004) does not include age-year interactions or state-year interactions.

To estimate the differential effect of laws between older women and older men, I modify equation (1) to embed the gender difference. I augment equation (1) by including a female dummy variable and interactions of the female dummy variable with every term in equation (1). The final model is the following:

$$\begin{aligned}
Y_{ist} = & \alpha' + \beta_1' F_{ist} \cdot LAW_{st} \cdot PTD_{ist} + \beta_2' LAW_{st} \cdot PTD_{ist} + \lambda F_{ist} + \gamma_1' F_{ist} \cdot A_{ist} + \gamma_2' A_{ist} \\
& + \pi_1' F_{ist} \cdot S_s + \pi_2' S_s + \rho_1' F_{ist} \cdot T_t + \rho_2' T_t + \delta_1' F_{ist} \cdot S_s \cdot T_t + \delta_2' S_s \cdot T_t + \phi_1' F_{ist} \cdot A_{ist} \cdot S_s \\
& + \phi_2' A_{ist} \cdot S_s + \mu_1' F_{ist} \cdot A_{ist} \cdot T_t + \mu_2' A_{ist} \cdot T_t + \varphi_1 F_{ist} \cdot X_{ist} + \varphi_2 X_{ist} + \nu_{ist}
\end{aligned} \quad (2)$$

In equation (2), β_2' estimates the effect of age discrimination laws on older men's labor market outcomes, $\beta_1' + \beta_2'$ estimates the effect of laws on older women's labor market outcomes. If the age discrimination laws boosted the employment of older men as it is established in the existing literature, β_2' should be positive and significant. Similarly, if the age discrimination laws boosted the employment of older women, $\beta_1' + \beta_2'$ should be positive and significant. Finally, β_1' measures the differential effect of the law between older men and older women. If the age discrimination law is not as effective in protecting older women as older men, then β_1' should be negative and significant. For retirement and unemployment outcomes, the signs of these estimates should be opposite to yield similar interpretation.

²⁶ My specification includes a full set of two-way interactions, therefore, I am less concerned about the parallel trend identification assumption, because unobservable trends at the state-year, age-year, and state-age level would be absorbed by the two-way fixed effects. Nonetheless, I include a set of graphs that show trends of the labor market outcomes separately by treatment and different control groups used in the model. These results are reported in the Online Appendix Figure 1. Reassuringly, these graphs do not show any concerning differential trends between treatment and control groups.

I want to note a couple of caveats to this empirical strategy. First, the measure of age discrimination laws used simply depends whether the state has an age discrimination law or not at time t . I do not consider any specific features of the law such as firm size covered, strength of damages allowed for the plaintiff, statute of limitations, recoverability of attorney's fees, or presence of an enforcement agency.²⁷ The sample period used begins in 1963 and it is rather challenging to correctly cull all the histories of specific features for each state age discrimination laws going all the way to the 1960s because not all state statutes are digitized. Second, although Adams (2004) used younger workers as a second control group, he is reluctant to call this a DDD estimator because he conjectures that age discrimination laws may affect young workers as well. Based on my knowledge, there is no evidence that age discrimination laws negatively affected younger workers. More importantly, the main focus of this study is to estimate the relative difference in the effect of age discrimination laws on older women compared to older men because older women may be subject to intersectional discrimination. Thus, this issue is not a main concern for my analysis in estimating the relative difference between men and women. I would argue that it is more important to fully control for any arbitrary changes in the dependent variables, which can be done by using younger workers as an additional control group.

4. Results

Main results

Table 4 reports the estimates of parameters in equation (2). The set of estimates reported under each column within the panel are from a separate regression. Each regression controls for individual level characteristics that are included in summary statistics in Table 3 and the full set of two-way interaction fixed effects. I first report the effect of age discrimination law for men (i.e., β_2' from equation (2)), the effect of age discrimination law for women (i.e., $\beta_1' + \beta_2'$ from equation (2)), then the difference between men and women (i.e., β_1' from equation (2)). The outcomes are indicated above. Panel A are the estimates from the state experiment, and panel B are the estimates from the federal experiment. The estimates in

²⁷ See Neumark and Song (2013) for variations in specific features of state age discrimination laws in recent period.

column 1 of Table 4 report a positive effect of age discrimination laws, but this positive effect was much smaller for women. It shows that state age discrimination laws increased the probability of being employed by 9.5 percentage points for all men, but it indicates that effect is 4.3 percentage points lower for women compared to men.²⁸ This estimate is statistically significant at the 10 percent level. The effect of the age discrimination law for women shows that the state age discrimination laws boosted the employment probability of older women by only 5.2 percentage points, which is statistically significant. The magnitudes of estimates are almost identical under the federal experiment reported in Panel B. As explained in the previous section, the significance of robust findings under the federal experiment is that it addresses any potential policy endogeneity bias concern associated with enactment of state age discrimination laws. The federal experiment uses the enactment of the ADEA, which is implemented at the federal level. Therefore, it is comforting to see similar results between two set of estimates. Column 2 of Table 4 reports the effect of age discrimination laws on retirement for older men and older women. Under the state experiment, I find that the state age discrimination laws lowered the probability of being retired by 8.8 percentage points for all protected men, whereas it decreased by only 0.8 percentage points for all protected women. The differential effect of 8.0 percentage points between men and women is found to be statistically significant. Although magnitudes are different, similar results hold under the federal experiment, except there is no evidence that the laws have any impact on retirement for women. Column 3 of Table 4 reports the unemployment regression results. Under the state experiment, I do not find any evidence that age discrimination laws had any effect on unemployment for both men and women, but the estimates from the federal experiment indicate that the age discrimination laws increased the probability of being unemployed for women by 1.0 percentage point.

Differential effects by age

²⁸ The estimates for men are larger than what is reported in Adams (2004). He used probit model for estimation and did not include age-state and state-year fixed effects in the model. When I do not include these fixed effects, the magnitude of estimates decreases.

I also examine the variant of equation (2) that separates the effect of age discrimination laws into different age groups. These age groups are age 50 or older and 60 or older. The estimates in Table 6 indicate that the effects of the age discrimination laws are more pronounced for older age groups for both men and women and the differential effect between older men and older women is also more pronounced for older age groups. Column 1 of Table 5 in the top panel shows all protected men age 50 or above benefit from a 11.2 percentage point increase in employment probability, whereas protected men age 60 or above experienced an increase of 14.9 percentage points after enactment of state age discrimination laws. The effect of the legislation for older women shows all protected older women age 50 or above benefit only by a 6.2 percentage point increase in employment probability, which is 5.0 percentage points lower than older men. For older women age 60 or older, the probability is 6.4 percentage points lower than older men age 60 or older. The results are similar under the federal experiment. The probability of being employed for older women age 50 or older was 4.6 percentage points, which is lower than older men by 3.5 percentage points. For older women age 60 or above, the difference is 4.3 percentage points, which is almost one percentage point larger.²⁹ These estimates are statistically significant at the conventional level. My results show that the differential effect between older women and older men is more pronounced for the older group of workers. One interpretation may be that the older age group of women are more susceptible to intersectional discrimination, but age discrimination laws are less effective. Column 2 of Table 5 report results for retirement. Similar to the employment outcome, the differential effect of age discrimination laws on retirement between older men and older women are more pronounced for the older age groups. After state age discrimination laws were enacted the probability of being retired for older women is higher for both age 50 or older and age 60 or older women by 12.3 and 16.9 percentage points compared to older men, respectively, resulting in an overall decrease of retirement by 1.1 and 1.4 percentage points after state age discrimination laws were enacted. Under the federal

²⁹ Although I am not reporting all the results, I have looked at finer age cutoffs. The results consistently show that the differential effect increases as the age cutoffs are higher.

experiment, we observe a similar gender differences, however, there is no evidence that the ADEA had an impact on older women.

Examining Alternative Explanations

My main results suggest that the age discrimination laws were much less effective in improving labor market outcomes for older women compared to older men. In this section, I examine further a potential alternative explanation for the observed gender differences. As discussed in the previous section, one possible alternative interpretation for this differential effect may be that older women may voluntarily leave the labor force more than older men. If labor supply decisions are made at the household level and the age discrimination laws improved the labor market outcomes for older men, then older women who are secondary earners within the household may choose to leave the labor force earlier. Also, women may have limited attachment to the labor force for various reasons such as child-bearing, which may have them left out of long-term employment implicit contracts that backload compensation (Lazear 1979). If age discrimination laws prevent firms from renegeing the long-term employment implicit contracts, then we may also observe differential effects of the laws between men and women (Neumark and Stock 1999). Although it is challenging to fully disentangle these alternative explanations, I attempt to address these concerns by restricting the sample to unmarried individuals. The assumption is that unmarried individuals do not make joint labor supply decisions and have stronger attachments to the labor force so age discrimination laws do not induce voluntary labor force exit. The top panel of Table 6 reports the estimates on the subsample of unmarried individuals. In general, findings are robust and, in some cases, results are even stronger. The probability of being employed increased by 16 percentage points for older men, but this effect is still smaller for older women by 6.9 percentage points. Under the state experiment, this differential effect is found to be statistically significant at the 1 percent level. For retirement, the laws decreased the probability of being retired by 5.8 to 7.7 percentage points for older men, but did not find any evidence that it affected older women. The estimates on the difference between men and women are statistically significant at the conventional level. One interesting new finding is that the state laws lowered the probability of being unemployed for older men by 4.2 percentage points, but did not have any effect

for older women. I also estimate these effects by different age categories and I report the estimates in Appendix Table A1. The results are very similar to Table 6 under the state experiment in that the effects of laws on employment and retirement are more pronounced for the older age groups. However, under the federal experiment, I do not find the general pattern of more pronounced effects for older men or for the larger gender differences in Table 6. I also do not find the effects of the ADEA were more pronounced for older men, either. Although these estimates from unmarried individuals may address the concern on joint labor supply decision at the household level, one disadvantage is that unmarried individuals during this sample period are not a representative sample.

Another possible alternative explanation of gender difference in age discrimination law effects would be that women may be overrepresented in small firms where age discrimination laws are not applicable. While the exact firm size applicability varies for state age discrimination laws, the ADEA only covers firms with 20 or more employees. To examine this concern, I re-estimated the main specification without those who work in small firms as of last year. For my sample period, the firm size information is not available as the CPS ASEC began collecting the firm size information in 1988. Therefore, I used industry as a proxy for firm size. According to the 1977 Business Statistics Dynamics, agriculture and construction had the highest share of employees working for firms with less than 20 employees.³⁰ Thus, I use these two sectors as a proxy for small firms and report the results in the middle panel of Table 6. The estimates reported are very similar to the estimates in my main analysis for both the state experiment and federal experiments.

Lastly, older women and older men may have different occupations and this may have made them more or less susceptible to age discrimination. In the bottom panel of Table 6, I explore the potential concern that the differential effect of the age discrimination may be due to the level of difference in age discrimination in occupation, I also report results with occupation fixed effects. I do this as a robustness check because occupational choice may be partly due to discrimination, so it is unclear whether the

³⁰ The year 1977 was the earliest year Business Statistics Dynamics was available, but the trend in the share of employees by firm size and industry has not changed much over time.

specification should include occupation controls. The estimates still show the general pattern of the differential effect I saw in the main result. As expected though, the magnitude of coefficient is smaller across all specification, which is consistent with the concern that occupation choice may be, in part, the result of discrimination. In Appendix Table A3, instead of controlling for occupation effects, I control for industry fixed effects to further investigate this. The estimates are nearly identical to results with occupation fixed effects.

Falsification analysis

In the 1960s, many important other anti-discrimination laws were enacted, so it is challenging to think of a convincing falsification analysis that avoid picking up other anti-discrimination effects. However, as part of my falsification analysis, I include only young workers in the analysis and I pretend that the age discrimination laws cover the ones who are age 25 or older instead of the actual covered age by the laws. In addition, for the state experiment, I drop the years after the enactment and bring in one additional pre-enactment period to completely avoid picking up other laws. Obviously, in these specifications, I expect age discrimination laws to not have any effects on employment, retirement, or unemployment as none these age groups not covered by the age discrimination laws. I report the results in Appendix Table A2. Reassuringly, I do not observe any evidence of age discrimination law effects across all specifications. In both experiments, employment estimates have opposite signs and none of the estimates are statistically significant. For state experiment retirement outcomes, the estimate on men and difference is statistically significant at the 10 percent level, but these estimates have the opposite sign from my main results, which does not make much sense. In addition, the gender difference in unemployment outcome is statistically significant at the 5 percent level, but I never found age discrimination laws to have any effect on unemployment of older workers.

Effects on black men, intersectional discrimination against race and age

The argument about older women's intersectional discrimination is not limited to discrimination against sex and age, but may extended to any individual within two or more protected groups. Lahey and Oxley (2018) use a laboratory experiment with randomized resumes and eye-tracking technology to show

evidence of intersectional discrimination against age and race of job applicants. Lahey and Oxley found that screeners preferred younger white applicants over black applicants and they also preferred older white applicants over black applicants. Interestingly, this difference disappears for middle-aged applicants. This motivates me to extend my analysis to black men who may be subject to discrimination for being black and old. The objective of this extended analysis is to examine the differential impact of age discrimination more broadly. Table 7 presents the differential effects of age discrimination laws on employment, retirement, and unemployment between white men and black men. To isolate the effect of race from gender, I restrict the sample to men only in this analysis.

Table 7 reports some interesting results. Under the state experiment, the coefficients on white men and black men are similar, although the statistical significances of the coefficient on black men are much weaker. When I separate the effect of the state laws by age groups, 50 or older and 60 or older, in the middle and bottom panels, I see that the effects were more pronounced for older workers, although the difference between white men and black men are not statistically significant. In other words, although the effects on black men are much weaker for all age groups, the results suggest that the state age discrimination laws were effective in increasing the employment of black men. However, under the federal experiment, I cannot reach the same conclusion. The estimates do not show that the federal ADEA improved older black men's employment or retirement outcomes. It is encouraging to see that the state age discrimination laws helped the black older men's labor market outcomes, there are a couple of issues to think about the overall results. First, Title VII of the Civil Rights Act passed in 1964, so state age discrimination laws partly pick up the effect of Title VII, although my specification is very flexible where I can control for this to a certain extent. Second, the more pronounced positive effect on older black men is consistent with the findings that black older men are more susceptible to age discrimination as Lahey and Oxley (2018) found. Their results show that race discrimination for older workers was more pronounced. Consequently, the age discrimination laws could have larger effects for this group. Third, the reason for different results between the federal and state age discrimination laws may suggest an important message that these protected groups should be covered under one statute to be protected against

intersection discrimination. However, I would be cautious about this last point since we did not reach the same conclusion about older women. As mentioned previously, many state laws follow the federal counterpart in interpreting their state laws even though age discrimination and gender discrimination are governed under one statute.

5. Concluding Remarks

The motivation of this study was the legal argument that older women, who are subject to intersectional discrimination for being both old and female, may need to be considered as a subgroup within the protected classes to receive adequate protection against discrimination in the workplace. Since courts do not always recognize them as a subgroup in legal cases, the implication is that age discrimination laws may be ineffective or less effective for older women.

To test this hypothesis, I estimated the differential effect of the age discrimination laws between older men and older women. The evidence in this paper indicates both state age discrimination laws and the federal Age Discrimination in Employment Act improved the labor market outcomes for older men, but had a far less favorable effect on older women. In some cases, I find that age discrimination laws did not improve the labor market outcomes for older women at all. This finding is consistent with the hypothesis that older women need to be considered as a subgroup of two protected classes to have adequate protection against intersectional discrimination. I conducted numerous robustness tests to alternative explanations about the gender difference in age discrimination laws. All my results consistently find that age discrimination laws were far less effective for older women compared to older men.

I used the variation in state and federal age discrimination laws in the late 1960s to test the gender difference in the effect of age discrimination laws. One natural concern from this research design would be how generalizable the findings are to a more recent period. The labor force participation rate of women has increased and the women gained more equality in the labor market in recent years compared to fifty years ago. However, a recent field experiment shows that older women suffer more from age discrimination than older men (Neumark et al, 2019). This is the exact outcome one may expect when age

discrimination laws are not providing adequate protections for older women. The first older women's intersectional discrimination claim was recognized in 1994 under Title VII, and the courts' views on this cause of action is still mixed. Moreover, intersectional discrimination claims have never been recognized as a cause of action under the ADEA. My empirical method uses the variation in having laws to not having laws during the period that had less equality for older women, which means that the laws should have a larger effect during my sample period. However, my results indicate that the age discrimination laws were not so effective for older women during this period. In addition, there is no clear reason to believe that we expect them to be more effective for older women in later periods. Given this evidence, it seems reasonable to support the argument for classifying older women as a subgroup of two protected classes and treating their cases as intersectional discrimination. This classification would close a loophole in the U.S. legal system that may allow discrimination against a subset of women or similarly a subset of older workers in the workplace.

My results also have a broad policy implication about anti-discrimination laws. The argument about age and gender discrimination also applies to age and disability discrimination. The ADA governs discrimination against disabled workers and is a separate statute from Title VII and the ADEA. This implies the limited power of these laws for providing protection against disability-plus discriminations. This is especially concerning for older workers since disability rate is highly correlated with age and we can easily imagine the disparate treatment against older workers who may have medical conditions. This distinction has been exacerbated since the U.S. Supreme Court decision in the *Gross v. FBL Financial Services*, in 2009 especially during the economic downturn. The significance of age discrimination laws has grown due to the population aging, however, peculiarities in our legal system may undermine the intended consequences of the policymakers in various ways.

References

- Adams, Scott J. (2004), "Age Discrimination Legislation and the Employment of Older Workers," *Labour Economics*, 11(2), 219-241.
- Ameri, Mason, Lisa Schur, Meera Adya, F. Scott Bentley, Patrick McKay, and Douglas Kruse (2018), "The Disability Employment Puzzle: A Field Experiment on Employer Hiring Behavior," *ILR Review*, 71(2), 229-364.
- Baert Stijin, Jennifer Norga, Yannick Thuy, and Marieke Van Hecke (2016), "Getting Grey Hairs in the Labour Market. An Alternative Experiment on Age Discrimination," *Journal of Economic Psychology*, 57(December), 86-101.
- Bazzini, Doris G., William D. McIntosh, Stephen M. Smith, Sabrina Cook, and Caleigh Harris (1997), "The Aging Woman in Popular Film: Underrepresented, Unattractive, Unfriendly, and Unintelligent," *Sex Roles*, 36(7), 531-543.
- Berman, Phyllis W., Barbara A. O'Nan, and Wayne Floyd (1981), "The Double Standard of Aging and the Social Situation: Judgments of Attractiveness of the Middle-Aged Woman." *Sex Roles*, 7(2), 87-96.
- Bertrand, Marianne, Ester Duflo, and Sendhil Mullainathan (2004), "How Much Should We Trust Difference-in-Differences Estimates?" *Quarterly Journal of Economics*, 119(1), 249-275.
- Biddle, Jeff E., and Daniel S. Hamermesh (1998), "Beauty, Productivity, and Discrimination: Lawyers' Looks and Lucre," *Journal of Labor Economics*, 16(1), 172-201.
- Button P. (2020), "Population Aging, Age Discrimination, and Age Discrimination Protections at the 50th Anniversary of the Age Discrimination in Employment Act" In: Czaja S., Sharit J., James J. (eds) *Current and Emerging Trends in Aging and Work*. Springer, Cham
- Carlsson and Eriksson (forthcoming), "Age Discrimination in Hiring Decisions: Evidence from a Field Experiment in the Labor Market," *Labour Economics*.
- Crocette, Sabina F. (1998), "Considering Hybrid Sex and Age Discrimination Claims by Women: Examining Approaches to Pleading and Analysis – A Pragmatic Model," *Golden Gate University Law Review*, 28, 115-175.
- Day, Jourdan (2014), "Closing the Loophole – Why Intersectional Claims Are Needed to Address Discrimination against Older Women," *Ohio State Law Journal*, 75(2): 447-76.
- Farber Henry S., Chris M. Herbst, Dan Silverman, Till von Wachter (2019), "Whom Do Employers Want? The Role of Recent Employment and Unemployment Status and Age," *Journal of Labor Economics*, 37(2): 323-349.

- Flood, Sarah, Miriam King, Renae Rodgers, Steven Ruggles and J. Robert Warren (2018), Integrated Public Use Microdata Series, Current Population Survey: Version 6.0. Minneapolis, MN: IPUMS. <https://doi.org/10.18128/D030.V6.0>
- Hamermesh, Daniel S. and Jeff E. Biddle (1994), "Beauty and the Labor Market," *The American Economic Review*, 84(5), 1174-1194.
- Hamermesh, Daniel S. and Amy Parker (2005), "Beauty in the Class Room: Instructors' Pulchritude and Putative Pedagogical Productivity," *Economics of Education Review*, 24(4), 369-396.
- Henss, Ronald (1991), "Perceiving Age and Attractiveness in Facial Photographs," *Journal of Applied Social Psychology*, 21(11), 933-946.
- Linda A. Jackson (1992), *Physical Appearance and Gender: Sociobiological and Sociocultural Perspective*. Albany: SUNY Press.
- Korthase, Kathleen M. and Irene Trenholme (1982), "Perceived Age and Perceived Physical Attractiveness," *Perceptual and Motor Skills*, 54(3c), 1251-1258.
- Lahey, Joanna (2008a), "Age, Women, and Hiring: An Experimental Study," *Journal of Human Resources*, 43(1), 30-56.
- Lahey, Joanna (2008b), "State Age Protection Laws and the Age Discrimination in Employment Act," *Journal of Law and Economics*, 51(3), 433-360.
- Lahey, Joanna N., and Doug R. Oxley (2018), "Discrimination at the Intersection of Age, Race, and Gender: Evidence from a Lab-in-the-Field Experiment," *NBER Working Paper 24429*.
- Lazear, Edward P. (1979), "Why Is There Mandatory Retirement?" *Journal of Political Economy*, 87(6), 1261-1284.
- Maestas, Nicole (2018), "The Return to Work and Women's Employment Decisions," *NBER Working Paper 24429*.
- Maestas, Nicole and Julie Zissimopoulos (2010), "How Longer Work Lives Ease the Crunch of Population Aging," *Journal of Economic Perspectives* 24(1), 139-160.
- McLaughlin, Joanne Song (2019), "Limited Legal Recourse for Older Women's Intersectional Discrimination Under the Age Discrimination in Employment Act," *The Elder Law Journal*, 26(2), 287-321.
- Neumark, David, and Wendy A. Stock (1999), "Age Discrimination Laws and Labor Market Efficiency," *Journal of Political Economy*, 107(5), 1081-1125.

- Neumark, David, Ian Burn, and Patrick Button (2019), “Is It Harder for Older Workers to Find Jobs? New and Improved Evidence from a Field Experiment,” *Journal of Political Economy*, 127(2), 922-970.
- Neumark, David, Ian Burn, Patrick Button, and Nanneh Chehras (2019), “Do State Laws Protecting Older Workers from Discrimination Reduce Age Discrimination in Hiring? Evidence from a Field Experiment,” *Journal of Law and Economics*, 62(2), 373-402.
- Neumark, David, and Patrick Button (2014), “Did Age Discrimination Protections Help Older Workers Weather the Great Recession?” *Journal of Policy Analysis and Management*, 33(4), 566-601.
- Neumark, David, and Joanne Song (2013), “Do Stronger Age Discrimination Laws Make Social Security Reforms More Effective?” *Journal of Public Economics* 108, 1-16.
- Neumark, David, Joanne Song, and Patrick Button (2017), “Does Protecting Older Workers from Discrimination Make It Harder to Get Hired? Evidence from Disability Discrimination Laws,” *Research on Aging*, 39(1), 29-63.
- Neumark, David, and Wendy Stock (2006), “The Labor Market Effects of Sex and Race Discrimination Laws,” *Economic Inquiry*, 44(3), 385-419.
- Pedulla, David S. (2014), “The Positive Consequences of Negative Stereotypes: Race, Sexual Orientation, and the Job Application Process,” *Social Psychology Quarterly*, 77(1), 75-94.
- Porter, Nicole Buonocore (2003), “Sex Plus Age Discrimination: Protecting Older Women Workers,” *Denver University Law Review*, 81, 79-111.
- Sandall, Steven H., and Howard M. Iams (1997), “Reducing Women’s Poverty by Shifting Social Security Benefits from Retired Couples to Widows,” *Journal of Policy Analysis and Management*, 16(2), 279-97.
- U.S. Department of Labor (1965), “The Older American Worker Age Discrimination in Employment,” *Report of the Secretary of Labor to the Congress under Section 715 of the Civil Rights Act of 1964*.

Figure 1: Years of Introduction of State Age Discrimination Laws

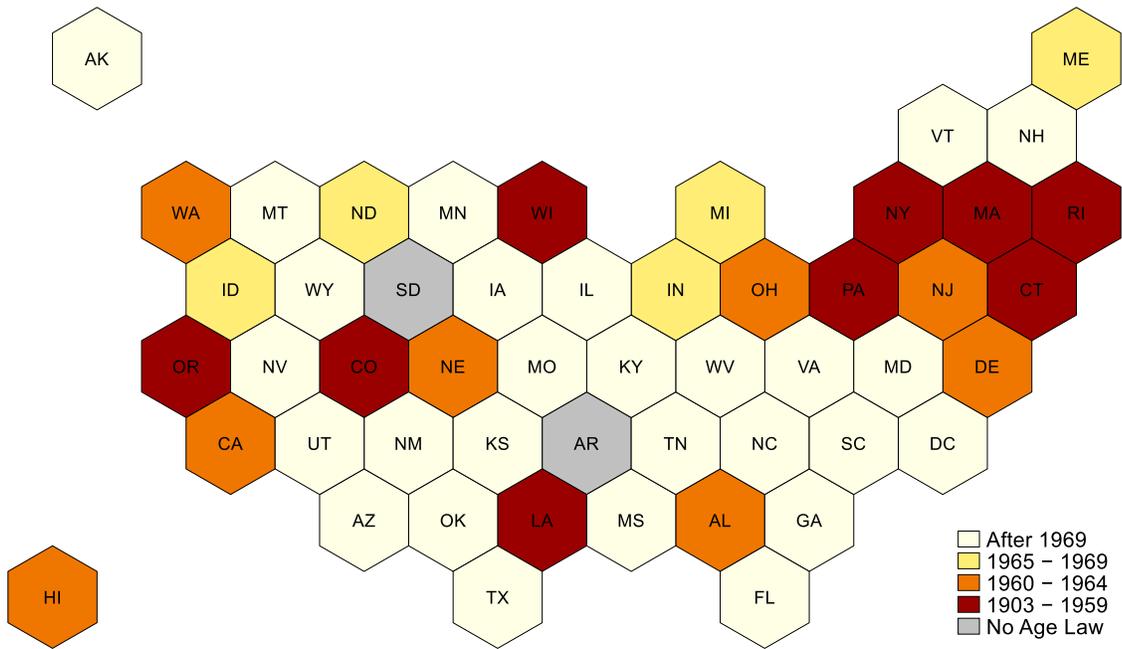
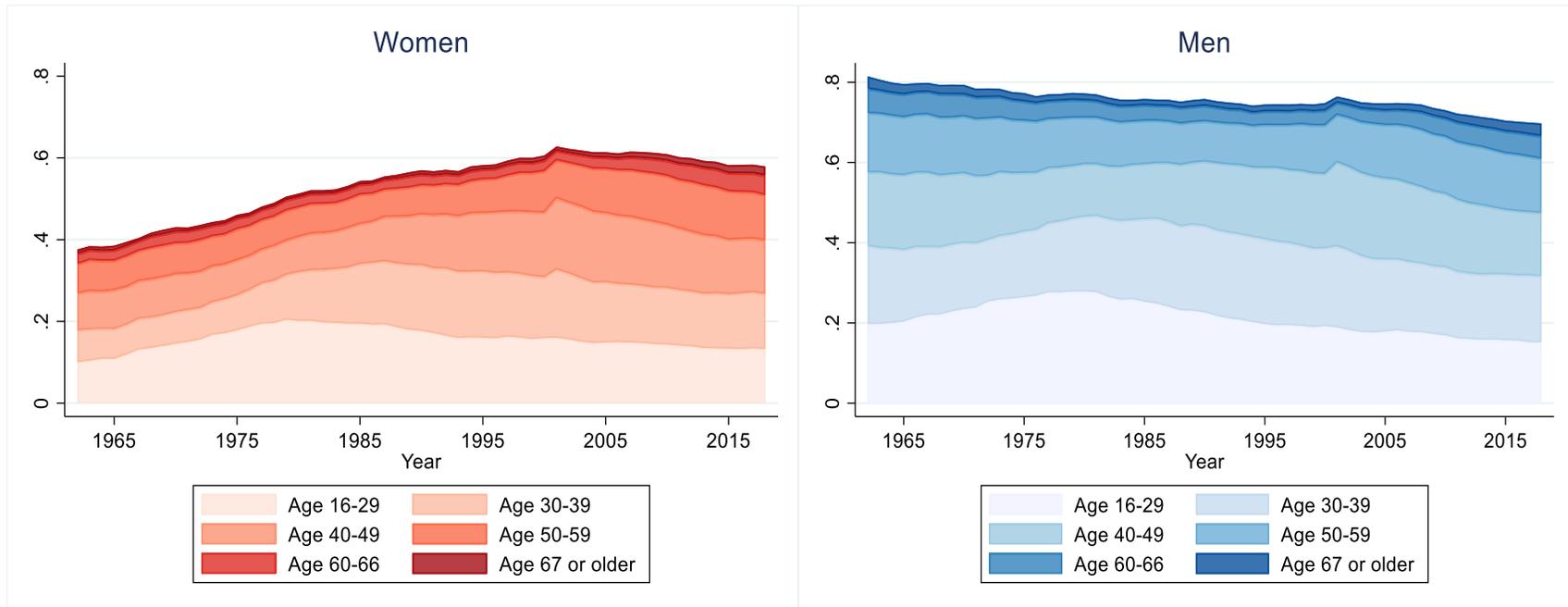


Figure 2: Labor Force Participation Rates



Notes: CPS ASEC from 1962 through 2018 are used to calculate the labor force participation rates (Flood et al., 2018).

Table 1: Illustrative Example to Show the Importance of Recognizing Intersectional Discrimination

Group	Employed	Discharged	Discharge Rate Based on Age	Discharge Rate Based on Sex	Discharge Rate Based on Intersectionality
Old women	5	3	4 out of 10 old workers vs.	4 out of 10 female workers vs.	3 out of 5 old female workers vs.
Old men	5	1	2 out of 10 young workers	2 out of 10 male workers	1 out of 5 old male workers vs.
Young women	5	1			1 out of 5 young female workers vs.
Young men	5	1			1 out of 5 young male workers

Table 2: Duration of Unemployment by Age and Gender

	Mean Number of Weeks Unemployed	
	Men	Women
	(1)	(2)
Age 16-29	7.24	7.20
Age 30-39	10.45	7.66
Age 40-49	10.87	10.38
Age 50-59	17.83	21.56
Age 60-65	15.49	18.50

Notes: These estimates are based on the CPS ASEC from 1962 to 1967 whose primary occupation is office work. Sampling weights are used (Flood et al.).

Table 3: Summary Statistics

	State Experiment		Federal Experiment	
	Employment and Retirement Regression	Unemployment Regression	Employment and Retirement Regression	Unemployment Regression
<i>Dependent Variable:</i>				
Employment	0.594 (0.491)	...	0.600 (0.490)	...
Retirement	0.0358 (0.186)	...	0.0367 (0.188)	...
Unemployment	...	0.0366 (0.188)	...	0.0377 (0.190)
<i>Independent Variable:</i>				
Female	0.530 (0.499)	0.353 (0.478)	0.530 (0.499)	0.364 (0.481)
Boundary of city	0.360 (0.480)	0.359 (0.480)	0.436 (0.496)	0.435 (0.496)
Non-metropolitan area	0.350 (0.477)	0.345 (0.476)	0.237 (0.425)	0.235 (0.424)
Divorced	0.0409 (0.198)	0.0483 (0.214)	0.0469 (0.211)	0.0551 (0.228)
Never married	0.143 (0.350)	0.153 (0.360)	0.156 (0.363)	0.167 (0.373)
Widowed	0.0497 (0.217)	0.0366 (0.188)	0.0501 (0.218)	0.0370 (0.189)
High school	0.555 (0.497)	0.560 (0.496)	0.568 (0.495)	0.570 (0.495)
Some college	0.183 (0.387)	0.193 (0.395)	0.207 (0.405)	0.219 (0.414)
College	0.0343 (0.182)	0.0466 (0.211)	0.0426 (0.202)	0.0570 (0.231)
N	234,596	149,698	242,694	156,944

Notes: The binary dependent variable employment is equal to one if an individual is employed, retirement is equal to one if an individual is retired, and unemployment is equal to one if an individual is unemployed at the time of survey. For the unemployment regression, I drop the individuals who are not in the labor force. Standard deviation is reported in parentheses. The state experiment uses CPS ASEC 1964 to 1967 and the federal experiment uses 1966 to 1971.

Table 4: The Effect of Age Discrimination Laws by Gender

	(1) Employment	(2) Retirement	(3) Unemployment
A. State experiment			
Age discrimination law on men (β_2')	0.0953*** (0.0323)	-0.0880*** (0.0297)	-0.00435 (0.00515)
Age discrimination law on women ($\beta_1' + \beta_2'$)	0.0523*** (0.0182)	-0.00764* (0.00397)	0.00864 (0.00663)
Difference compared to men (β_1')	-0.0430* (0.0241)	0.0803*** (0.0283)	0.0130 (0.00850)
R ²	0.312	0.288	0.037
N	234,596	234,596	149,698
B. Federal experiment			
Age discrimination law on men (β_2')	0.0814*** (0.034)	-0.0614*** (0.0173)	-0.00116 (0.00608)
Age discrimination law on women ($\beta_1' + \beta_2'$)	0.0416** (0.0160)	-0.00370 (0.00421)	0.00504 (0.00361)
Difference compared to men (β_1')	-0.0398* (0.0214)	0.0577*** (0.0162)	0.00621 (0.00682)
R ²	0.294	0.290	0.025
N	242,694	242,694	156,944

Notes: The coefficients, β_1' , β_2' are defined in equation (2). Separate linear probability models are used for these analyses and the standard errors reported in the parenthesis are clustered at the state level. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. All estimates are weighted to be nationally representative. The binary dependent variable employment is equal to one if an individual is employed and binary dependent variable retirement is equal to one if an individual is retired at the time of survey. All specifications include individual level controls such as SMSA, marital status, and education level, age group dummy variables, state, year fixed effects, the female dummy variable as well as interactions between the female dummy variable and all the controls variables included in the model. The state experiment covers years between 1964 and 1967. Under the state experiment, treatment states are Idaho, Indiana, Maine, Michigan, and North Dakota, and their state age discrimination laws were enacted in 1965. Therefore, I treat the state age discrimination laws to be in effect after 1965. The federal experiment covers years between 1966 and 1971. Under federal experiment, treatment states are the District of Columbia, Florida, Illinois, and Texas and the federal ADEA was enacted in 1967. However, the ADEA was not in effect until 180 days after December 15, 1967 and the CPS interviews were conducted in March of each year. Therefore, I treat the ADEA to be in effect after 1969. The sample is restricted to individuals who are older than 40 years old and 70 years old or younger. The coefficients are defined in equation (2). Notes from Table 3 apply. The sample is restricted to individuals who are older than 18 years old and 70 years old or younger and the specification includes interactions between age and state, age and year, and state and year fixed effects.

Table 5: The Effect of Age Discrimination Laws by Gender for Different Age Groups

	(1) Employment	(2) Retirement	(3) Unemployment
A. State experiment			
Age disc. law on men, 50 or older	0.112*** (0.0293)	-0.134*** (0.0315)	-0.0000514 (0.00638)
Age disc. law on women, 50 or older	0.0620** (0.0245)	-0.0108** (0.00408)	0.0154* (0.00812)
Difference compared to men, 50 or older	-0.0502** (0.0231)	0.123*** (0.0314)	0.0155* (0.00832)
<hr/>			
Age disc. law on men, 60 or older	0.149*** (0.0179)	-0.183*** (0.0255)	0.000380 (0.0112)
Age disc. law on women, 60 or older	0.0852*** (0.0172)	-0.0141*** (0.00408)	0.000856 (0.0110)
Difference compared to men, 60 or older	-0.0640*** (0.0220)	0.169*** (0.0261)	0.000476 (0.0101)
N	234,596	234,596	149,698
<hr/>			
B. Federal experiment			
Age disc. law on men, 50 or older	0.0810*** (0.0179)	-0.0840*** (0.0191)	0.00187 (0.00458)
Age disc. law on women, 50 or older	0.0458** (0.0188)	-0.00390 (0.00574)	0.00259 (0.00481)
Difference compared to men, 50 or older	-0.0352* (0.0162)	0.0801*** (0.0184)	0.000719 (0.00663)
<hr/>			
Age disc. law on men, 60 or older	0.115*** (0.0147)	-0.119*** (0.0180)	0.00703 (0.00867)
Age disc. law on women, 60 or older	0.0721*** (0.0208)	-0.0109 (0.00703)	0.00942 (0.00707)
Difference compared to men, 60 or older	-0.0430** (0.0169)	0.108*** (0.0193)	0.00239 (0.00842)
N	242,694	242,694	156,944

Notes: Notes from Table 4 apply. The estimates are based on the DDD model in equation (2).

Table 6: Examining Alternative Explanations

	(1)	(2)	(3)	(4)	(5)	(6)
	Employment	Retirement	Unemployment	Employment	Retirement	Unemployment
	A. State Experiment			B. Federal experiment		
<i>Restricted to Single Individuals</i>						
Age discrimination law on men	0.159*** (0.0386)	-0.0765* (0.0435)	-0.0417*** (0.0140)	0.135** (0.0597)	-0.0583** (0.0215)	-0.0101 (0.0162)
Age discrimination law on women	0.0901*** (0.0294)	-0.00426 (0.00933)	0.0103 (0.00990)	0.0871** (0.0279)	0.00128 (0.00828)	0.00216 (0.00772)
Difference compared to men	-0.0693*** (0.0175)	0.0723* (0.0425)	0.0520*** (0.0163)	-0.0482 (0.0421)	0.0595** (0.0234)	0.0122 (0.0193)
N	54,684	54,684	35,605	61,463	61,463	40,671
<i>Excluding Small Firms</i>						
Age discrimination law on men	0.0895*** (0.0321)	-0.0874*** (0.0325)	0.00183 (0.00546)	0.0831** (0.0285)	-0.0628*** (0.0188)	-0.000720 (0.00593)
Age discrimination law on women	0.0529*** (0.0194)	-0.00750* (0.00398)	0.00836 (0.00673)	0.0414** (0.0155)	-0.00356 (0.00421)	0.00517 (0.00353)
Difference compared to men	-0.0365 (0.0253)	0.0799** (0.0306)	0.00653 (0.0103)	-0.0417* (0.0227)	0.0592*** (0.0177)	0.00589 (0.00630)
N	214,319	214,319	132,665	228,991	228,991	145,082
<i>Control for Occupation</i>						
Age discrimination law on men	0.0492** (0.0237)	-0.0806*** (0.0279)	-0.00478 (0.00498)	0.0269 (0.0267)	-0.0543*** (0.0154)	-0.000337 (0.00580)
Age discrimination law on women	0.0223*** (0.00731)	-0.00418 (0.00395)	0.0102 (0.00788)	0.00827 (0.00978)	-0.000273 (0.00365)	0.00802 (0.00410)
Difference compared to men	-0.0270 (0.0234)	0.0764*** (0.0272)	0.0150 (0.00957)	-0.0186 (0.0228)	0.0540*** (0.0150)	0.00835 (0.00764)
N	234,578	234,578	149,682	242,681	242,681	156,933

Notes: Notes from Table 4 apply. The estimates are based on the DDD model in equation (2).

Table 7: The Effect of Age Discrimination Law for Black Men, Extended Analysis on Intersectional Discrimination Against Race and Age

	(1)	(2)	(3)	(4)	(5)	(6)
	Employment	Retirement	Unemployment	Employment	Retirement	Unemployment
	A. State experiment			B. Federal experiment		
Age discrimination law on white men	0.0945*** (0.0316)	-0.0880*** (0.0289)	-0.00452 (0.00567)	0.0814** (0.0282)	-0.0614*** (0.0173)	-0.00116 (0.00609)
Age discrimination law on black men	0.0914* (0.0489)	-0.0776 (0.0586)	0.0367 (0.0376)	0.0130 (0.0412)	-0.0320 (0.0319)	0.00862 (0.0217)
Difference compared to white men	-0.00312 (0.0569)	0.0104 (0.0395)	0.0412 (0.0366)	-0.0683 (0.0395)	0.0294 (0.0263)	0.00979 (0.0203)
Age disc. law on men, 50 or older	0.110*** (0.0282)	-0.133*** (0.0314)	-0.0000504 (0.00813)	0.0810*** (0.0179)	-0.0840*** (0.0191)	0.00187 (0.00458)
Age disc. law on black men, 50 or older	0.1805*** (0.0583)	-0.159* (0.0879)	0.00635 (0.0504)	0.0226 (0.0460)	-0.0728 (0.0443)	0.0128 (0.0284)
Difference compared to white men, 50 or older	0.0706 (0.0611)	-0.0259 (0.0703)	0.00640 (0.0512)	-0.0584 (0.0497)	0.0112 (0.0397)	0.0110 (0.0281)
Age disc. law on men, 60 or older	0.147*** (0.0179)	-0.182*** (0.0247)	0.000398 (0.0125)	0.115*** (0.0147)	-0.119*** (0.0181)	0.00703 (0.00868)
Age disc. law on black men, 60 or older	0.296** (0.109)	-0.241* (0.122)	-0.0176 (0.0902)	0.0510 (0.0630)	-0.131* (0.0638)	0.0371 (0.0394)
Difference compared to white men, 60 or older	0.149 (0.116)	-0.0591 (0.102)	-0.0180 (0.0917)	-0.0641 (0.0696)	-0.0120 (0.0602)	0.0300 (0.0380)
N	122,538	122,538	107,299	124,368	124,368	108,682

Notes: Notes from Table 4 apply. The estimates are based on the DDD model in equation (2) and the sample is restricted to men only.

Online Appendix

Appendix Table A1: The Effect of Age Discrimination Laws by Gender for Different Age Groups, Restricted to Single Individuals

	(1) Employment	(2) Retirement	(3) Unemployment
A. State experiment			
Age disc. law on men, 50 or older	0.194*** (0.0451)	-0.181*** (0.0366)	-0.0607** (0.0295)
Age disc. law on women, 50 or older	0.0752** (0.0294)	-0.00732 (0.00979)	0.0188 (0.0159)
Difference compared to men, 50 or older	-0.119** (0.0379)	0.173*** (0.0404)	0.0795** (0.0320)
Age disc. law on men, 60 or older	0.232*** (0.0531)	-0.220*** (0.0327)	-0.0757** (0.0367)
Age disc. law on women, 60 or older	0.0854*** (0.0287)	-0.0119 (0.0117)	0.00492 (0.0188)
Difference compared to men, 60 or older	-0.147*** (0.0447)	0.208*** (0.039)	0.0806* (0.0402)
N	54,684	54,684	35,604
B. Federal experiment			
Age disc. law on men, 50 or older	0.0907* (0.0407)	-0.110** (0.029)	-0.00210 (0.0291)
Age disc. law on women, 50 or older	0.0795*** (0.0197)	0.000739 (0.0107)	0.00364 (0.00546)
Difference compared to men, 50 or older	-0.0112 (0.0349)	0.110* (0.034)	0.00574 (0.0317)
Age disc. law on men, 60 or older	0.0954* (0.0436)	-0.074* (0.034)	-0.00441 (0.0455)
Age disc. law on women, 60 or older	0.0911*** (0.0286)	-0.00572 (0.0126)	0.00708** (0.00882)
Difference compared to men, 60 or older	-0.00426 (0.035)	0.070 (0.041)	0.0115 (0.0432)
N	61,463	61,463	40,671

Notes: Notes from Tables 4 apply. The estimates are based on the DDD model in equation (2) and the sample is restricted to individuals who are not married.

Appendix Table A2: Robustness checks, Controlling for Industry

	(1) Employment	(2) Retirement	(3) Unemployment
A. State experiment			
Age discrimination law on men	0.0490** (0.0236)	-0.0811*** (0.0281)	-0.00456 (0.00511)
Age discrimination law on women	0.0227* (0.00768)	-0.00408 (0.00421)	0.0101 (0.00782)
Difference compared to men	-0.0263 (0.0236)	0.0770*** (0.0273)	0.0146 (0.00982)
R ²			
N	234,578	234,578	149,682
B. Federal experiment			
Age discrimination law on men	0.0267 (0.0275)	-0.0547*** (0.0160)	-0.000763 (0.00571)
Age discrimination law on women	0.00828 (0.0102)	-0.000516 (0.00367)	0.00874** (0.00376)
Difference compared to men	-0.0184 (0.0225)	0.0542*** (0.0157)	0.00951 (0.00750)
R ²			
N	242,681	242,681	156,933

Notes: Notes from Tables 4 apply. The estimates are based on the DDD model in equation (2) and the sample is restricted to men only.

Appendix Table A3 The Effect of Age Discrimination Law on Uncovered Age Groups, Falsification Tests

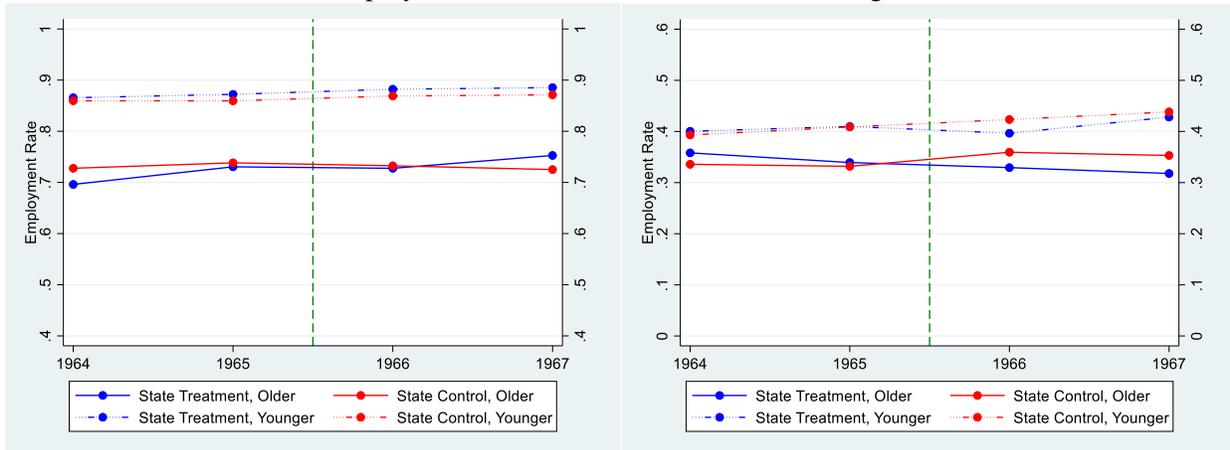
	(1) Employment	(2) Retirement	(3) Unemployment
A. State experiment			
Age discrimination law on men (β_2')	-0.0195 (0.0209)	0.0147* (0.00847)	-0.00965 (0.0152)
Age discrimination law on women ($\beta_1' + \beta_2'$)	-0.00974 (0.04842)	-0.00265 (0.00305)	-0.0126 (0.0149)
Difference compared to men (β_1')	0.00981 (0.0466)	-0.0173* (0.00883)	-0.00292 (0.0180)
N	56,672	56,672	36,446
B. Federal experiment			
Age discrimination law on men (β_2')	-0.0160 (0.0155)	-0.00279 (0.00569)	-0.0121 (0.0110)
Age discrimination law on women ($\beta_1' + \beta_2'$)	0.0191 (0.0211)	0.00310 (0.00462)	0.0131 (0.00995)
Difference compared to men (β_1')	0.0351 (0.0324)	0.00589 (0.00784)	0.0252** (0.00843)
N	117,982	117,982	78,145

Notes: Notes from Table 4 apply. The estimates are based on the DDD model in equation (2) and the sample is restricted to individuals who are between age 18 or older and 40 or younger. I pretend the age discrimination laws to cover the ones who are age 25 or older instead of real covered age by the law.

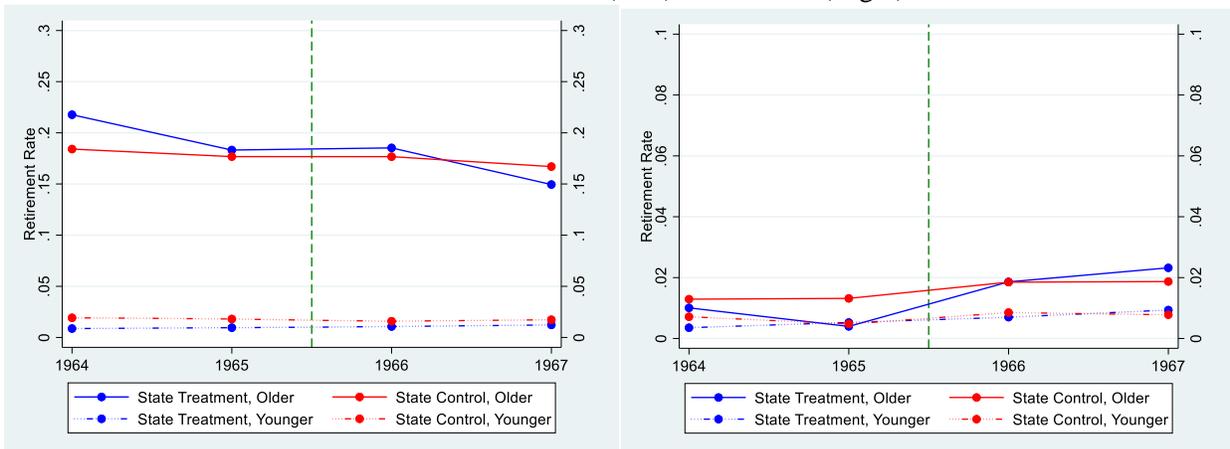
Online Appendix Figure 1

State Experiment

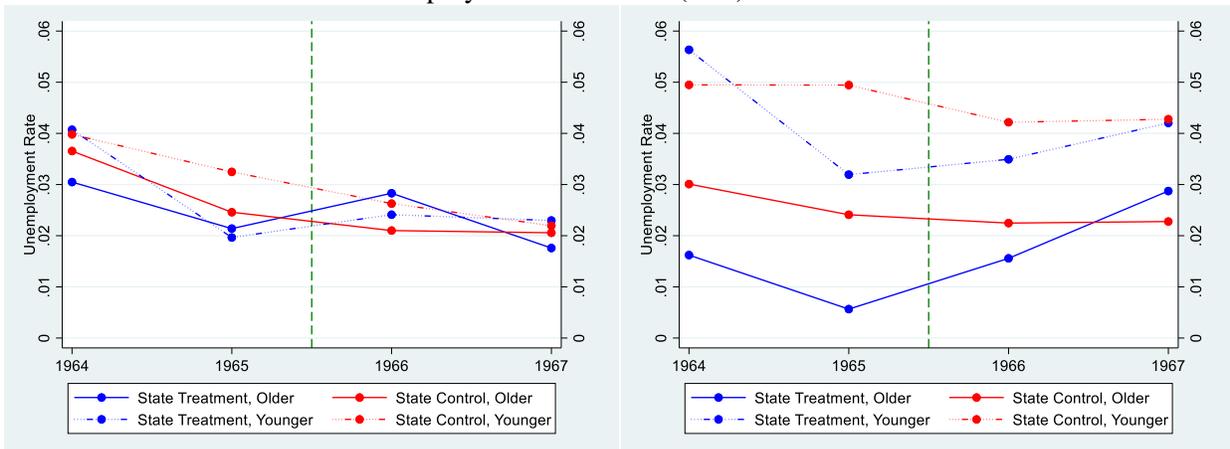
Employment Rates Men (Left) vs. Women (Right)



Retirement Rates Men (Left) vs. Women (Right)

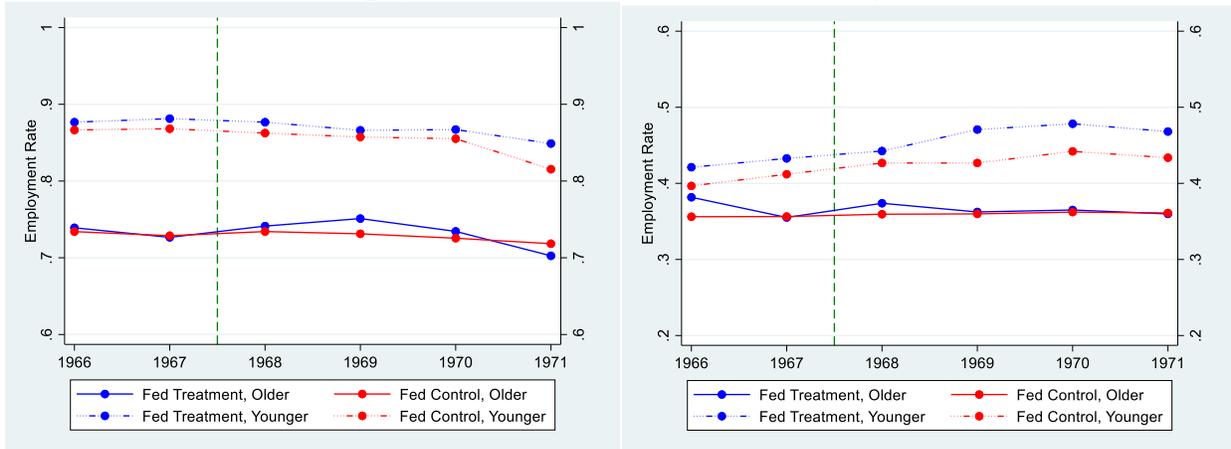


Unemployment Rates Men (Left) vs. Women (Right)

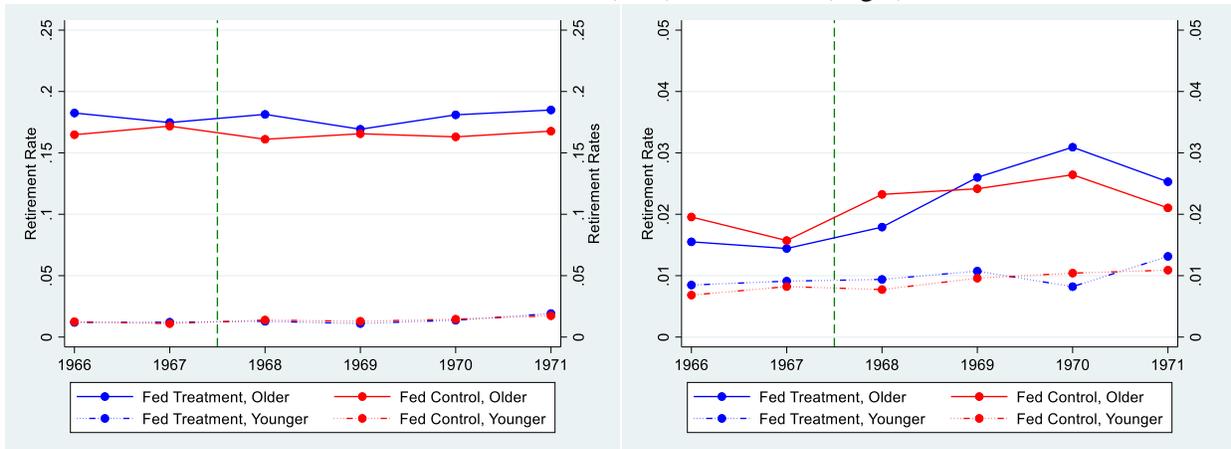


Federal Experiment

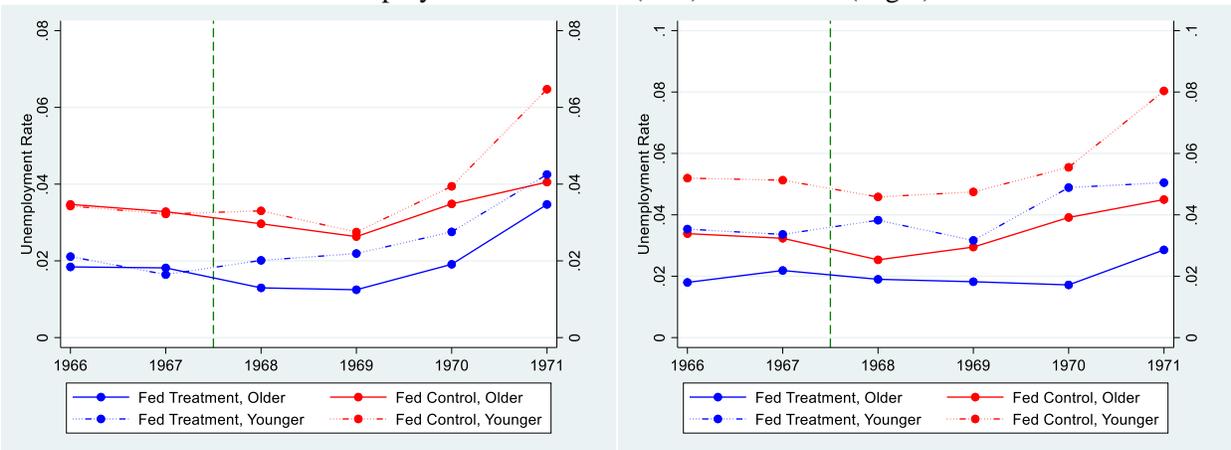
Employment Rates Men (Left) vs. Women (Right)



Retirement Rates Men (Left) vs. Women (Right)



Unemployment Rates Men (Left) vs. Women (Right)



Notes: Older age group consists of individuals who are 50 years or older, and younger age group consists of those who are younger than 40 years old. The dashed green vertical bar indicates when the law was enacted for each treatment.