Falling Between the Cracks: Discrimination Laws and Older Women

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Abstract:

Title VII of the Civil Rights Act of 1964 protects women from sex discrimination, while the Age Discrimination in Employment Act of 1967 prohibits discrimination against workers over the age of 40. Since an older woman may be subject to discrimination in the workplace based on both age and sex, legal scholars argue that age and sex discrimination laws must be used jointly to protect the older-woman minority group. However, courts do not always use them together in practice and do not necessarily give older women protection based on membership in both protected classes. This implies that age discrimination law alone may be not as effective or even ineffective in protecting older women compared to older men. The present study examines this implication by estimating the differential effect of age discrimination laws on labor market outcomes between women and men. The findings show that age discrimination laws do far less to improve labor market outcomes for older women than for older men, which supports the argument that older women need to be classified as a subgroup of two protected classes to receive adequate protection.

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1. Introduction

Previous economic studies have examined various forms of illegal discrimination such as race, sex, age, and disability and estimated the effects of laws in protecting workers against these types of discrimination. This paper analyzes how effective U.S. antidiscrimination laws are in protecting older women against a unique type of discrimination they may experience in the workplace. Older women may be discriminated against based on: (i) age (being old compared to young); (ii) sex (being female compared to male); (iii) both age and sex (being old and female compared to young and male). The last type of discrimination, based on membership in both protected classes, is known as intersectional discrimination.

The two key federal antidiscrimination laws that protect workers against discrimination in employment practices such as hiring, discharge, promotions, and compensation are Title VII of the Civil Rights Act of 1964 (Title VII) and the Age Discrimination in Employment Act of 1967 (ADEA).[1] Title VII prohibits employment discrimination on the basis of sex, race, color, religion, or national origin. The ADEA prohibits discrimination against workers over age 40.[2] To provide adequate protection for older women who may be faced with intersectional discrimination, legal scholars argue that the laws protecting each of the two classes (in this case sex and age) must be used jointly, recognizing older women as a subgroup of two protected classes (Porter, 2003; Crocette, 1998). However, for various reasons, courts do not always allow older women to bring their unique discrimination claims as intersectional discrimination cases in practice.[3] This suggests that the ADEA alone may be ineffective or not as effective in

[1] There are other employment laws that protect workers against discrimination, but they are not the focus of this study. For example, Americans with Disabilities Act of 1990 protects qualified workers with disabilities against discrimination in employment and the Equal Pay Act of 1963 requires employers to pay equal for equal work.
[2] When the ADEA was passed in 1967, the act prohibited discrimination for all persons age between 40 and 65. In 1978, it was amended to raise the upper age limit to 70 and subsequently, the upper age limit was removed in 1986.
[3] *Thompson v. Mississippi State Personnel Board*, 674 F. Supp. 198 (N.D. Miss 1987); *Murdock v. B.F. Goodrich*, 1992 Ohio App. LEXIS 6611; *Sherman v. American Cyanamid Company*, 1999 U.S. App. LEXIS 21086. These cases are discussed in greater detail in the following section.

protecting older women compared to older men. The purpose of this study is to test this hypothesis by estimating the differential effect of age discrimination laws on older men's and older women's labor market outcomes.

The importance of recognizing older women as a subgroup can be seen more clearly using a hypothetical example. We can consider a workforce that consists of five old women, five young women, five old men, and five young men where the company discharges three old women and one from each of the remaining three groups. If this case were to be viewed as an intersectional discrimination claim, the statistical evidence would indicate that the probability of being discharged for older women is estimated to be 40 percentage points higher than the other groups (i.e. young women, old men, or young men). However, if this claim were to be viewed solely as either sex or age discrimination, the estimated probability of being discharged for older women is only 20 percentage points higher than men or all young employees. Therefore, the strength of evidence for the older women plaintiff would be reduced substantially.

Economists have empirically found a premium associated with appearance (Hamermesh and Biddle, 1994; Biddle and Hamermesh, 1998, Hamermesh and Parker, 2005).[4] Moreover, psychological and sociological studies suggest why older women may be susceptible to more adverse bias in the workplace. Korthase and Trenholme (1982) and Henss (1991) find as age increases, attractiveness decreases, showing the inverse relationship between age and attractiveness in experimental studies. Furthermore, appearance is more valued in women and the perception of decline in attractiveness with age is more prominent for women (Korthase and Trenholme, 1982; Henss, 1991; Bazzini et al, 1997; Berman, O'Nan and Floyd, 1981). These

[4] 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.

studies collectively suggest older women may be subject to intersectional discrimination in the workplace.

Although such studies indicate that older women may be subject to intersectional discrimination for being both old and women, the lack of consistency in treating older women as a subgroup in legal court settings suggests age discrimination laws alone may be ineffective or not as effective in protecting older women compared to older men. Previous studies have shown that age discrimination laws have been effective at protecting older workers, but these estimated effects have been restricted to male workers (Neumark and Stock, 1999; Adams 2004). Therefore, studying the differential effect of age discrimination laws on older men's and older women's labor market outcomes closes the gap in this literature.

One important alternative explanation of the difference in labor market outcomes, which may be spuriously reflected as differential effect of age discrimination laws between older men and older women in my analysis, may be that older women may voluntarily leave the work force more than older men. If older men can stay in the work force longer, who tend to be married to older women, then older women who are secondary earners within the household may choose to leave the labor force earlier. Although it is difficult to fully disentangle this effect of voluntary departure from discrimination in the workplace, I attempt to address this issue by reexamining the estimation by restricting the women's sample to single women.[5]

To preview, I find robust findings that indicate that age discrimination laws do far less to improve both employment and retirement for older women than for older men. In some cases, I found no evidence that age discrimination is effective in labor market outcomes for older women. These support the legal scholars' argument that to provide adequate protection for older

[5] Since single women in the 1960 are not representative of all women in the 1960s, I run this as an additional analysis and rather view as a robustness of findings instead of interpreting as the overall effect of age discrimination laws on labor market outcomes for older women.

women, the laws protecting against sex and age discrimination must be used jointly and consider older women as a subgroup of protected classes.

The remainder of the paper proceeds as follows. Section 2 discusses some relevant legal cases that show the inconsistency in classification of older women in courts. Section 3 describes the research design, data, and empirical models used in this analysis. Section 4 presents results, and section 5 concludes by discussing some implications of this study.

2. Intersectional Discrimination and Court Decisions

Although many intersectional discrimination cases involving race and sex under Title VII have acknowledged the importance of treating the subset of women (e.g. black women) as a separate protected class, there are mixed court decisions and opinions on acknowledging older women as a separate protected subgroup. *Thomas v. Mississippi State Personnel Board*[6], *Murdock v. B.F. Goodrich*[7], and *Sherman v. American Cyanamid Company*[8] are some examples of cases where the court refused to recognize the older women's claims as intersectional claims. In *Thomas v. Mississippi State Personnel Board*, the older woman plaintiff provided evidence of intersectional discrimination by comparing herself to young women (i.e. women under 40) and older men (i.e. men over 40). But the court refused to acknowledge older women as a separated protected subgroup and held that the plaintiff's evidence failed to show discrimination against older male employees or younger female employees. In *Murdock v. B.F. Goodrich*, the court held that older women are not a separate protected class under state or federal law and decided that proof of age discrimination against older women was insufficient to show discrimination. Similarly, in *Sherman v. American Cyanamid Company*, the U.S. Sixth Circuit Court of Appeals declined to view the plaintiff's claim as intersectional discrimination against older women. One

[6] 674 F. Supp. 198 (N.D. Miss 1987)
[7] 1992 Ohio App. LEXIS 6611
[8] 1999 U.S. App. LEXIS 21086

of the reasons for this decision was 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.

Paralleling these cases, other types of intersectional discrimination claims are not generally accepted under the ADEA (Crocette, 1998). In *Kelly v. Drexel University*[9], the plaintiff alleged discrimination based on age and disability during a reduction in workforce. According to the court, a subgroup protection is valid only under Title VII and this applies only to sex and some other form of discrimination. The court further stated it does not have the authority to make a decision for an intersectional discrimination claim under the ADEA. In *Luce v. Dalton*[10], an intersectional discrimination case involving age and religion, and age and disability, the court stated that unlike Title VII, there is no argument for Congress' intention to include any subgroup for protection other than age under the ADEA.

However, some courts have ruled in favor of older women by treating them as a subgroup of protected classes. This indicates that some courts do recognize the importance of viewing older women's claim as intersectional discrimination cases to provide adequate protection. The first case that recognized older women as a subgroup and discussed the legal justification was *Arnett v. Aspin*[11] in 1994. The plaintiff argued that she was discriminated against relative to both younger women and men over the age of 40 in promotion opportunities. The defendant's argument against the plaintiff's allegation was that the claim should be viewed as two separate claims rather than as an intersectional discrimination claim because Title VII does not allow intersectional discrimination claims based on sex and age. The court allowed the plaintiff to pursue her claim as an intersectional discrimination case under Title VII to close a loophole that may allow employers to discriminate against a subgroup of women.

[9] 907 F.Supp. 864, 875 n.8 (E.D. Pa. 1995)
[10] 166 F.R.D. 457 (S.D. Cal. 1996)
[11] 846 F.Supp. 1234, 1238 (E.D. Pa. 1994)

The rationale for recognizing a subgroup of women as a protected class can be supported by other types of intersectional discrimination cases. An early case that recognized intersectional discrimination for a subgroup of women involves a black woman in *Jefferies v. Harris County Community Ass'n*.[12] The case was first dismissed at the lower court because the claim was not addressed as intersectional discrimination against black women. However, the U.S. Fifth Circuit Court of Appeals reversed the lower court's decision and held that a court must consider the case as intersectional discrimination to provide adequate protection for black women. The court reasoned 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.

3. Research Design, Data, and Estimation Approach

3.1. Research Design and Data

This study relies on two identification strategies to test whether age discrimination laws are effective in improving labor market outcomes for older women: passage or expansion of state age discrimination laws across states in 1965 (state experiment); the enactment of the federal ADEA in 1967 (federal experiment). I use Current Population Survey (CPS) merged with the state age discrimination law data collected by Neumark and Stock (1999) and Adams (2004) covering the quasi-experiment period used in this study. I restrict the samples to white workers to avoid issues related to racial discrimination in employment and workers older than 18 years.

Prior to the enactment of the federal ADEA, some states had similar age discrimination laws in effect. Both of the identification strategies rely on the variation in age discrimination laws across states to implement a quasi-experimental design. Under the state experiment

[12] 425 F.Supp. 1208, 1213-15 (S.D. Tex. 1977)

strategy, treatment states are those that enacted state age discrimination laws in 1965, and remaining states serve as control states. The state experiment uses CPS data from all states from 1964 to 1967 during which all the states are uniquely identified in CPS. 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. Thus, these states are the treatment group in the state experiment strategy.

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. Under the federal experiment strategy, I limit the data to three years before and after the enactment of the ADEA to estimate the effect of the legislation. 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. Consequently, the time frame covers the years between 1966 and 1971.[13] However, not all states are identifiable in CPS during this period. Only the District of Columbia, California, Connecticut, Florida, Illinois, Indiana, New Jersey, New York, Ohio, Pennsylvania, and Texas can be uniquely identified between 1968 and 1972 in CPS. Among these identifiable 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 40 and 64 years old, and Pennsylvania covered only workers between 40 and 62 years old before the ADEA. Since the ADEA covered workers

[13] The time frame used in Adams (2004) to study the federal ADEA is from 1964 to 1972.

between 40 and 65 years old, the additional variations in age limitation in California and Pennsylvania are also used to identify the effect of the ADEA.

3.2. Empirical Model

The purpose of this study is to empirically test the hypothesis of whether age discrimination law alone adequately protects older women who may be subject to intersectional discrimination in the workplace. One way to test this is to estimate the differential effect of age discrimination laws on labor market outcomes between men and women, before and after the enactment of these laws. As discussed earlier, the empirical strategy focuses on using the enactment of the ADEA and state age discrimination laws over time and across states. Using these variations in the timing of enactment and expansion of age limitation cutoffs of the state age discrimination laws across states, I adopt the difference-in-difference-in-differences (DDD) strategy similar to that used by Neumark and Stock (1999) and Adams (2004) with sex difference embedded in the model.

My first estimation approach begins with the following standard difference-in-differences (DD) framework using the variation in the timing of enactment of the state age discrimination laws across states with unrestricted state and year fixed effects:

$$Y_{ist} = \alpha + \beta LAW_{st} + \gamma A_{ist} + \pi S_s + \rho T_t + \varphi X_{ist} + \varepsilon_{ist} \qquad (1)$$

In equation (1), 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; S_s is a vector of state dummy variables; T_t is a vector of year dummy variables; A_{ist} is a vector of age group dummy variables denoting different age groups.[14] X_{ist} is a vector of individual level demographic controls that includes: Standard Metropolitan Statistical

[14] Specifically, 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.

Area (SMSA) status, marital status, and education level.[15] 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. The main identifying assumption in the DD model is that there were no other unobserved shocks to outcomes that coincide with the adoption of age discrimination laws that affect labor market outcomes.

To estimate the differential effect of laws between older women and older men, I modify equation (1) to embed sex differences. In practice, this amounts to augmenting equation (1) by including a female dummy variable, F_{ist}, as well as interactions of the female dummy variable with every term in equation (1). Specifically, I formulate the following model:

$$\begin{aligned} Y_{ist} = {} & \alpha' + \beta_1 F_{ist} \cdot LAW_{st} + \beta_2 LAW_{st} + \delta F_{ist} + \gamma_1 F_{ist} \cdot A_{ist} + \gamma_2 A_{ist} \\ & + \pi_1 F_{ist} \cdot S_s + \pi_2 S_s + \rho_1 F_{ist} \cdot T_t + \rho_2 T_t + \varphi_1 F_{ist} \cdot X_{ist} + \varphi_2 X_{ist} + \varepsilon_{ist} \end{aligned} \quad (2)$$

The estimate of equation (2) is the same as estimating equation (1) for the subsamples of male and female separately. However, the advantage of equation (2) is that it allows me to directly test the significance of the differential effect of age discrimination laws between men and women, which is captured by β_1. One concern for this standard DD model is that in the presence of time-varying factors that may be correlated with the enactment of the age discrimination laws, the DD estimator could be biased. Because of this concern, I take advantage of the age thresholds for which these laws provide protection. This yields the following DDD model:

$$Y_{ist} = \alpha'' + \beta' LAW_{st} \cdot PTD_{ist} + \gamma' A_{ist} + \pi' S_s + \rho' T_t + \delta' S_s \cdot T_t + \phi' A_{ist} \cdot S_s + \mu' A_{ist} \cdot T_t + \varphi' X_{ist} + \xi_{ist} \quad (3)$$

In equation (3), PTD_{ist} is a dummy variable equal to one if the respondent is within an age group protected by his/her state's age discrimination laws. The age-state interactions ($A_{ist} \cdot S_s$) control

[15] 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.

for age-specific state effects, and age-year interactions ($A_{ist} \cdot T_t$) remove biases common to all workers of a particular age in a given year. Adding state-year interactions ($S_s \cdot T_t$) addresses the concern of biases that arise from any economic shocks that are specific to each state by year (i.e., time-varying factors), which was the issue in the DD model. Lastly, β' captures the effect of the age discrimination laws.

Paralleling the previous modification, to estimate the differential effect of laws between older women and older men, I modify equation (1) to embed the sex difference. I augment equation (3) by including a female dummy variable and interactions of the female dummy variable with every term in equation (3). The final model becomes the following:

$$\begin{aligned} Y_{ist} = {} & \alpha''' + \beta_1' F_{ist} \cdot LAW_{st} \cdot PTD_{ist} + \beta_2' LAW_{st} \cdot PTD_{ist} + \lambda F_{ist} + \gamma_1' F_{ist} \cdot A_{ist} + \gamma_2' A_{ist} \\ & + \pi_1' F_{ist} \cdot S_s + \pi_2' S_s + \rho_1' F_{ist} \cdot T_t + \rho_2' T_t + \delta_1' F_{ist} \cdot S_s \cdot T_t + \delta_2' S_s \cdot T + \phi_1' F_{ist} \cdot A_{ist} \cdot S_s \\ & + \phi_2' A_{ist} \cdot S_s + \mu_1' F_{ist} \cdot A_{ist} \cdot T_t + \mu_2' A_{ist} \cdot T_t + \varphi_1 F_{ist} \cdot X_{ist} + \varphi_2 X_{ist} + \upsilon_{ist} \end{aligned} \quad (4)$$

The main coefficient of interest in equation (4) is β_1', which estimates the difference in labor market outcomes between older men and older women as a result of the enactment of age discrimination laws. As previous studies show (Neumark and Stock, 1999; Adams, 2004), if the age discrimination laws boost the employment of older male workers, β_2' should be positive and significant. If the age discrimination law is not as effective in protecting older women as older men, then β_1' should be negative and significant. Moreover, $\beta_1' + \beta_2'$ indicate the overall effect of age discrimination laws on older women's labor market outcomes. Finally, in all my specifications, I cluster the standard errors at the state level (Bertrand, Duflo, and Mullainathan, 2004).

One concern for my DDD estimator is that age discrimination laws may affect labor market outcomes for both protected and unprotected workers. However, because the purpose of this study is to estimate the sex difference in the effect of the age discrimination law, these

results still provide an estimate of the relative difference between older men and older women. Thus, this issue is not a main concern for my analysis.

4. Results

4.1. Preliminary Evidence

Table 1 reports simple mean difference in employment and retirement rates in treatment states separately by men and women before and after the enactment of state age discrimination laws and the ADEA. As discussed previously, under the state experiment treatment states consist of Idaho, Indiana, Maine, Michigan, and North Dakota and under the federal experiment treatment states consist of Illinois, District of Columbia, Florida, and Texas under federal experiment.[16] These estimates are measured separately by age group. For example, the top panel under each experiment shows the mean difference in proportion employed for individuals age 40 or older and the bottom panel shows the mean difference for individuals age 50 or older. Table 1 reports that while the proportion of employed men age 40 years or older increased by 1.7 percentage points after the law was enacted, the proportion of employed women in the same age group is estimated to have decreased by 1.5 percentage points. Similarly, the proportion of employed men age 50 or older increased by 3.1 percentage points, whereas the proportion of employed women in the same age group is estimated to have decreased by 2.2 percentage points. Although I did not find a significant increase in employment for both men and women age 40 or older under the federal experiment, there was an increase in the proportion of employed men age 50 or older, and there is a slight decrease in employment for older women.

The proportion of retired individuals before and after the enactment of age discrimination also shows a similar pattern, but obviously in the opposite direction under the state experiment.

[16] The effect can be also identified from individuals between age 63 and 65 in Pennsylvania, and 65 year old individuals in California.

The results show that the proportion of retired men age 40 or older and age 50 or older decreased, but it increased for women in both age groups. Under the federal experiment, it was estimated to have increased after the enactment of the ADEA.

These mean differences can be viewed as preliminary evidence on how the effect of state age discrimination laws on employment and retirement differ between men and women. Although most of the differences are not statistically significant, the general pattern for men is an increases in employment and decrease in retirement after the enactment of age discrimination laws, whereas we do not observe the a similar pattern for women. This preliminary evidence suggests there is a difference in the effect of age discrimination laws on labor market outcomes for older men and older women. This coincides with what is predicted by the legal argument explained in the previous sections.

4.2. The Effect on Employment and Retirement

Table 2 presents the DD estimates that include year and state fixed effects in the specification (i.e., equation (2)). Each column of each panel reports estimates from a separate linear probability model and the labor market outcome of interest is indicated on the top. It first reports the effect of age discrimination law on each outcome for men (i.e., β_2 from equation (1)), the overall effect of age discrimination law for women (i.e., $\beta_1+\beta_2$ from equation (1)) and the differential effect of age discrimination law between men and women (i.e., β_1 from equation (1)). Panel A shows results under the state experiment and panel B shows results under the federal experiment.

The results indicate a positive effect of both state age discrimination laws and the federal ADEA for all men in the protected group, but not necessarily for women. Column 1 of Table 1 shows that the legislation increased the probability of employment for all men in the protected

age group by 1.6 percentage points, but it actually decreased the probability of employment for all women by 1.9 percentage points under the state experiment. This indicates that the effect is lower for women compared to men by 3.5 percentage points. These estimates are statistically significant. Under the federal experiment, it also shows that the legislation increased the probability of employment for all men in the protected age group by 1.4 percentage points and it also increased for women by 1.7 percentage points. This is the only case where I find improvement in labor market outcomes for both men and women. I restrict the women's sample to single women to address the concern under second earner's model. Column 2 of Table 1 shows even greater differential effect between men and women and the positive effect I found under the federal experiment disappears when I use only single women.

The results are similar for retirement. The state experiment indicates that the age discrimination laws have decreased the probability for being retired for all men in the protected group, whereas they have increased the probability of being retired for women in the protected age group. This amounts to a higher increase in probability of retirement for women by 2.9 percentage points compared to men. When I restrict the women's sample to single women, similar results still hold with stronger point estimates. These differential effects between women and men are statistically significant. Under the federal experiment, the differential effect is more suggestive because all estimates are found to be statistically insignificant.

Table 3 reports the DDD estimates. The format of the table is analogous to Table 2 reporting the effect of age discrimination law on each outcome for men (i.e., β_2' from equation (2)), the overall effect of age discrimination law for women (i.e., $\beta_1'+\beta_2'$ from equation (1)) and the differential effect of age discrimination law between men and women (i.e., β_1' from equation (1)). The overall result of Table 3 is similar to the DD estimates reported in Table 2. It points to

a positive effect for all men in the protected age groups, but that is not necessarily true for all women in the protected age groups. In some cases, there is no evidence that age discrimination laws improved the labor market outcomes for women. Column 1 of Table 3 shows that state age discrimination laws increased the probability of being employed by 9.0 percentage points for all me in the protected age group, but it indicates that effect is 3.9 percentage points lower for women compared to men.[17] However, this estimate is not significant. The overall effect of the age discrimination law for women shows that the state age discrimination law boosted the employment probability of older women by only 5.5 percentage points, which is found to be statistically significant. Column 2 of Table 3 reports the estimates obtained by using only single women, but in this case, I did not find any differential effect between men and women. Under the federal experiment, the results are similar. I find that the age discrimination laws improve the probability of being employed far less for women compared to men.

Columns 3-4 of Table 3 report the effect of age discrimination laws on retirement for men and women. Under the state experiment, I find that the state age discrimination laws lowered the probability of being retired by 8.5 percentage points for all protected men, whereas it decreased by only 0.9 percentage points for all protected women. The differential effect of 7.6 percentage points between men and women is found to be statistically significant. Similar results hold under the federal experiments except there is no evidence that the laws have any impact on retirement for women. These findings are robust even when I further restrict the women's sample to single women only.

To further analyze the separate effect of age discrimination laws on employment, I differentiate the effect of the law on older and younger protected workers with different cut-off

[17] 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.

age groups as specified in the table. Table 4 presents the results. Comparison of the estimates across different age specifications shows the effects are stronger for older men. Specifically, column 1 of Table 4 in the top panel indicates all protected males age 50 or above benefit from a 10.9 percentage point increase in employment probability, whereas protected males age 60 or above enjoyed an increase of 14.8 percentage points after enactment of state age discrimination laws. The overall effect of the legislation for older women shows all protected older women age 50 or above benefit only a 6.1 point increase in employment probability, which is 4.8 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 5.3 percentage points, but it is lower by 5.5 percentage points.[18] These estimates are statistically significant. They mean that the differential effect between older women and older men is more pronounced for the older group of workers.

The columns 4-5 of Table 4 report results for retirement. The differential effect of age discrimination laws between older men and older women are more pronounced for the older age groups. Under the state experiment, magnitudes of estimates are almost identical between columns 3 and 4. 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 compared to older men by 12.2 and 17 percentage points, resulting in an overall decrease of retirement by 1.2 and 1.4 percentage points after state age discrimination laws were enacted. The estimates are similar under federal experiment, but there is no evidence that the ADEA decreased the retirement of older women. The results are robust in single women analyses.

[18] Although I am not reporting all the results, but I have looked at finer age cutoffs. The results are consistent showing that the differential effect is increasing as the age cutoffs are higher. (Results available upon request.)

5. Concluding Remarks

The motivation of this study has been 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 of two protected classes to have 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 not provide adequate protection for older women. To test this hypothesis, I estimate the differential effect of the age discrimination laws between men and 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. To address the concern that older women may voluntarily leave the labor force under the second earners model, which is not correlated with discrimination in the workplace, I re-analyzed the estimation by further restricting the women's sample to single women. I find consistent differential and less favorable effects of age discrimination laws on older women compared to older men. 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 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.

Reference

Adams, Scott J. (2004), "Age Discrimination Legislation and the Employment of Older Workers," *Labour Economics*, 11(2), 219-241.

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.

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.

Hemermesh, Daniel S. and Jeff E. Biddle (1994), "Beauty and the Labor Market," *The American Economic Review*, 84(5), 1174-1194.

Hemermesh, 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.

Korthase, Kathleen M. and Irene Trenholme (1982), "Perceived Age and Perceived Physical Attractiveness," *Perceptual and Motor Skills*, 54(3c), 1251-1258.

Neumark, David, and Wendy A. Stock (1999), "Age Discrimination Laws and Labor Market Efficiency," *Journal of Political Economy*, 107(5), 1081-1125.

Porter, Nicole Buonocore (2003), "Sex Plus Age Discrimination: Protecting Older Women Workers," *Denver University Law Review*, 81, 79-111.

Table 1: Mean of Employment and Retirement in Treatment States Before and After the Enactment of Age Discrimination Laws

	Employment		Retirement	
	Men	Women	Men	Women
	(1)	(2)	(3)	(4)
A. State experiment				
Before, age 40 or older	0.713	0.340	0.203	0.010
	(0.007)	(0.010)	(0.009)	(0.002)
After, age 40 or older	0.730	0.325	0.186	0.025
	(0.005)	(0.008)	(0.007)	(0.002)
Difference (After – Before, 40 or older)	0.017	-0.015	-0.017**	0.015***
	(0.013)	(0.013)	(0.007)	(0.004)
N	5,325	5,920	5,325	5,920
Before, age 50 or older	0.585	0.276	0.319	0.012
	(0.014)	(0.012)	(0.014)	(0.003)
After, age 50 or older	0.616	0.254	0.288	0.033
	(0.010)	(0.009)	(0.010)	(0.004)
Difference (After – Before, 50 or older)	0.031	-0.022	-0.031*	0.020***
	(0.018)	(0.015)	(0.016)	(0.005)
N	3,388	3,890	3,388	3,890
B. Federal experiment				
Before, age 40 or older	0.707	0.358	0.039	0.012
	(0.003)	(0.003)	(0.001)	(0.001)
After, age 40 or older	0.724	0.368	0.061	0.028
	(0.008)	(0.007)	(0.003)	(0.002)
Difference (After – Before, 40 or older)	0.017**	0.010	0.070***	0.016***
	(0.008)	(0.008)	(0.006)	(0.002)
N	20,563	24,225	20.563	24,225
Before, age 50 or older	0.728	0.367	0.121	0.009
	(0.005)	(0.005)	(0.002)	(0.001)
After, age 50 or older	0.751	0.362	0.190	0.026
	(0.011)	(0.011)	(0.007)	(0.004)
Difference (After – Before, 50 or older)	0.023	-0.005	0.063***	0.017***
	(0.012)	(0.012)	(0.009)	(0.003)
N	9,456	11,044	9,456	11,044

Notes: The reported estimates are means of the dependent variables used in the analysis by different age groups and do not control for any other individual demographic characteristic. Standard errors are reported in parenthesis. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. 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. Only individuals age 40 or older and age 50 or older are reported, as results are similar for individuals 60 or older. (Results available upon request.) 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. Thus, my binary "after" variable is equal to one for those who are observed after 1965. The federal experiment covers years between 1966 and 1971. Under the 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, under the federal experiment, my "after" variable is equal to one for those who are observed after 1969.

Table 2: The Effect of Age Discrimination Law on Employment and Retirement of Men and Women (DD Model)

	Employment		Retirement	
	(1)	(2)	(3)	(4)
A. State experiment				
Age discrimination law on men (β_2)	0.016**	0.016**	-0.019**	-0.019**
	(0.007)	(0.007)	(0.007)	(0.007)
Age discrimination law on women ($\beta_1 + \beta_2$)	-0.019*	-0.035***	0.010***	0.024***
	(0.009)	(0.012)	(0.002)	(0.009)
Difference compared to men (β_1)	-0.035**	-0.051***	0.029***	0.042***
	(0.014)	(0.014)	(0.008)	(0.011)
R^2	0.228	0.232	0.174	0.134
N	143,544	92,642	143,544	92,642
B. Federal experiment				
Age discrimination law on men (β_2)	0.014**	0.014**	-0.008	-0.008
	(0.005)	(0.005)	(0.008)	(0.008)
Age discrimination law on women ($\beta_1 + \beta_2$)	0.017**	0.003	0.002	0.011
	(0.006)	(0.012)	(0.003)	(0.007)
Difference compared to men (β_1)	0.003	-0.011	0.010	0.019
	(0.009)	(0.011)	(0.009)	(0.013)
R^2	0.223	0.146	0.089	0.077
N	124,712	76,685	124,712	76,685
Restricted to single women	No	Yes	No	Yes

Notes: The coefficients 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 sample is restricted to individuals who are older than 40 years old. 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.

Table 3: The Effect of Age Discrimination Law on Employment and Retirement of Men and Women (DDD Model)

	Employment		Retirement	
	(1)	(2)	(3)	(4)
A. State experiment				
Age discrimination law on men (β_2')	0.090**	0.090**	-0.085***	-0.085***
	(0.033)	(0.033)	(0.029)	(0.029)
Age discrimination law on women ($\beta_1' + \beta_2'$)	0.050***	0.092***	-0.009**	-0.010
	(0.016)	(0.029)	(0.004)	(0.009)
Difference compared to men (β_1')	-0.039	0.003	0.076**	0.075**
	(0.026)	(0.019)	(0.028)	(0.028)
R^2	0.358	0.395	0.445	0.452
N	256,867	160,654	256,867	160,654
B. Federal experiment				
Age discrimination law on men (β_2')	0.109***	0.109***	-0.053**	-0.053**
	(0.034)	(0.034)	(0.019)	(0.019)
Age discrimination law on women ($\beta_1' + \beta_2'$)	0.058***	0.103***	-0.004	0.004
	(0.014)	(0.027)	(0.004)	(0.010)
Difference compared to men (β_1')	-0.052	-0.007	0.049**	0.057**
	(0.029)	(0.017)	(0.019)	(0.023)
R^2	0.294	0.239	0.290	0.312
N	242,694	149,815	242,694	149,815
Restricted to single women	No	Yes	No	Yes

Notes: The coefficients are defined in equation (4). 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, age-state, age-year, state-year fixed effects, female dummy variable as well as interactions between 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.

Table 4: The Effect of Age Discrimination Laws by Men, Women, and Age Group

	Employment		Retirement	
	(1)	(2)	(3)	(4)
A. State experiment				
Age disc. law on men, 50 or older	0.109***	0.109***	-0.134***	-0.134***
	(0.029)	(0.029)	(0.032)	(0.032)
Age disc. law on women, 50 or older	0.061**	0.079**	-0.012***	-0.012
	(0.021)	(0.029)	(0.003)	(0.008)
Difference compared to men, 50 or older	-0.048**	-0.030	0.122***	0.122***
	(0.024)	(0.021)	(0.032)	(0.031)
Age disc. law on men, 60 or older	0.148***	0.148***	-0.184***	-0.184***
	(0.018)	(0.018)	(0.024)	(0.024)
Age disc. law on women, 60 or older	0.084***	0.092***	-0.014***	-0.013
	(0.016)	(0.029)	(0.003)	(0.011)
Difference compared to men, 60 or older	-0.064***	-0.056*	0.170***	0.172***
	(0.023)	(0.027)	(0.025)	(0.027)
N	256,867	160,654	256,867	160,654
B. Federal experiment				
Age disc. law on men, 50 or older	0.106***	0.106***	-0.075***	-0.075***
	(0.021)	(0.021)	(0.020)	(0.020)
Age disc. law on women, 50 or older	0.048	0.082***	-0.006	0.001
	(0.015)	(0.020)	(0.005)	(0.014)
Difference compared to men, 50 or older	-0.053**	-0.024	0.069***	0.076**
	(0.019)	(0.024)	(0.021)	(0.027)
Age disc. law on men, 60 or older	0.130***	0.130***	-0.101***	-0.101***
	(0.021)	(0.021)	(0.018)	(0.018)
Age disc. law on women, 60 or older	0.075***	0.095***	-0.011	-0.005
	(0.018)	(0.021)	(0.006)	(0.017)
Difference compared to men, 60 or older	-0.055**	-0.035	0.090***	0.097***
	(0.021)	(0.025)	(0.021)	(0.030)
N	242,694	149,815	242,694	149,815
Restricted to single women	No	Yes	No	Yes

Notes: See notes to Table 3. 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.

Appendix Table: Descriptive Statistics

	State Experiment	Federal Experiment
Dependent Variable:		
Employment	0.551 (0.497)	0.600 (0.490)
Retirement	0.063 (0.242)	0.024 (0.153)
Independent Variable:		
Female	0.534 (0.499)	0.530 (0.499)
Boundary of city	0.352 (0.478)	0.289 (0.453)
Non-metropolitan area	0.355 (0.478)	0.158 (0.365)
Divorced	0.039 (0.194)	0.047 (0.211)
Never married	0.136 (0.342)	0.156 (0.363)
Widowed	0.085 (0.279)	0.050 (0.218)
High school	0.529 (0.499)	0.568 (0.495)
Some college	0.175 (0.380)	0.207 (0.405)
College	0.033 (0.178)	0.043 (0.202)
N	256,867	242,694

Notes: 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. Standard deviation is reported in parenthesis.