

Minimum Wages and Racial Inequality*

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Abstract

The earnings difference between white and black workers fell dramatically in the United States in the late 1960s and early 1970s. This paper shows that the extension of the minimum wage played a critical role in this decline. The 1966 Fair Labor Standards Act extended federal minimum wage coverage to agriculture, restaurants, nursing homes, and other services which were previously uncovered and where nearly a third of black workers were employed. We digitize over 1,000 hourly wage distributions from Bureau of Labor Statistics industry wage reports and use CPS micro-data to investigate the effects of this reform on wages, employment, and racial inequality. Using a cross-industry difference-in-differences design, we show that wages rose sharply for workers in the newly covered industries. The impact was nearly twice as large for black workers as for white. Within treated industries, the racial gap adjusted for observables fell from 25 log points pre-reform to zero afterwards. Using a bunching design, we find no effect of the reform on employment. We can rule out significant dis-employment effects for black workers. The 1966 extension of the minimum wage can explain more than 20% of the reduction in the racial earnings and income gap during the Civil Rights Era. Our findings shed new light on the dynamics of labor market inequality in the United States and suggest that minimum wage policy can play a critical role in reducing racial economic disparities.

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1 Introduction

One of the most striking dimensions of inequality in America is the persistence of large racial economic disparities (Bayer and Charles, 2018; Chetty et al., 2018). A major aspect of these disparities is the earnings difference between black and white workers. There is a 25% gap between the average annual earnings of white and African-American workers today.¹ Over the last 70 years, this gap fell significantly only once, during the late 1960s and early 1970s, when it was reduced by a factor of about two. What made the white-black earnings gap fall? Understanding the factors behind this historical improvement may provide insights for reducing the large racial disparities that still exist today.

A large literature has put forward various explanations for the decline in racial inequality during the 1960s and 1970s, including federal anti-discrimination legislation (Freeman, 1973) and improvements in education (Card and Krueger, 1992). The magnitude of the decline, however, remains a puzzle (see Donohue and Heckman, 1991, and our discussion of the related literature in Section 2 below).

This paper provides a new explanation for the falling racial earnings gaps during this period: the extension of the federal minimum wage to new sectors of the economy. The Fair Labor Standards Act of 1966 introduced the federal minimum wage (as of February 1967) in sectors that were previously uncovered and where black workers were over-represented: agriculture, hotels, restaurants, schools, hospitals, nursing homes, entertainment, and other services. These sectors employed about 20% of the total U.S. workforce and nearly a third of all black workers. Perhaps surprisingly, the role of this major reform in the much studied decline in racial inequality during the Civil Rights Era has not been analyzed before. We show that it had large positive effects on wages for low-wage workers, and that the effects were more than twice as large for black workers as for white. Our estimates suggest that the 1967 extension of the minimum wage can explain more than 20% of the decline in the racial earnings gap during the late 1960s and early 1970s. Moreover, we find that this reform did not have detectable adverse employment effects on either black or white workers. The extension of the minimum wage thus not only reduced the racial earnings gap (the difference in earnings for employed individuals) but also the racial income gap (the difference in income between black and white individuals, whether working or not). Our paper provides the first causal evidence on how minimum wage policy affects racial income disparities.

¹The racial earnings gap is measured here as the mean log annual earnings difference between white and black workers (i.e., conditional on working) using the 2016 Annual Social and Economic Supplement of the Current Population Survey.

Our contribution in this paper is twofold. First, we provide an in-depth analysis of the causal effect of the 1967 extension of the minimum wage—a large natural quasi-experiment—on the dynamics of wages and employment. To conduct this analysis, we use a variety of data sources and research designs that paint a consistent picture. A key data contribution of the paper is to assemble a novel dataset on hourly wages by industry, occupation, gender, and region. In the 1960s, 1970s, and 1980s, the Bureau of Labor Statistics (BLS) published regular industry wage reports with detailed information on the distribution of hourly wages by 5 and 10 cents bins, including the number of workers employed in each of these bins. For the purpose of this research we digitized more than 1,000 of these tabulations. This new data source allows us to provide transparent and robust evidence on the effects of the 1967 minimum wage extension on wages and employment. We also rely on micro-data from the March Current Population Survey (CPS), which allow us to investigate how the effects of the reform vary with race and other socio-economic characteristics such as education. Taken together, the CPS and BLS data enable us to provide consistent and clear graphical evidence on the short- and medium-term impacts of the extension of the minimum wage.

The analysis proceeds in two steps. First, we show that the 1967 reform had a large effect on wages for workers at the bottom of the earnings distribution. Our newly digitized BLS data reveal clear evidence of an immediate and sharp hourly wage increase for low-paid workers: a large mass of workers paid below \$1 in 1966 (the level of the minimum wage introduced in 1967) bunches at \$1 in 1967. To quantify the magnitude of the wage effect, our baseline empirical approach is a cross-industry difference-in-differences research design: we compare the dynamics of wages in the newly vs. previously covered industries, before and after 1967. In the CPS data, the average annual earnings of workers in the industries covered in 1938 (our control group) evolve in parallel to the annual earnings of workers in the industries covered in 1967 (our treated group) before the reform. In 1967, they jump by 6% relative to the control industries and the effect is permanent through the late 1970s. The magnitude of the wage increase is consistent with the predicted mechanical effect of the minimum wage hike estimated using the pre-reform CPS. We obtain an identical differential increase in average hourly wage in the newly covered industries using the BLS data. We estimate that 16% of workers in the treated industries are affected by the reform and that they receive a 34% wage increase on average in 1967. The wage effect on treated workers is large because before 1967, many of them (predominantly black workers) were employed at wages far below the federal minimum wage of \$1 introduced in 1967. The wage increase in the newly covered industries is concentrated among workers with a low level of education.

The magnitude of the wage effect is robust to a series of tests and to controlling for a wide range of observable characteristics and time trends.

In a second step, we study the effect of the 1967 minimum wage extension on employment. Using our BLS data, we implement a "bunching estimator" (following [Harasztsosi and Lindner, Forthcoming](#)). Within treated industries, we compare the 1966-1967 evolution of the mass of workers employed at or just above the minimum wage (who were affected by the reform) to the evolution of the mass of workers employed higher up in the distribution (who were not affected). The large number of workers bunching at the newly introduced minimum wage in 1967 suggests that the minimum wage did not significantly reduce employment among low-wage workers, despite the sharp increase in wages. If anything, the reform appears to have had slight positive employment effects. Employment expanded in the newly covered industries (slightly faster than in the control industries), and employment at the bottom of the distribution expanded slightly faster than employment at the top. Our finding of small (possibly positive) employment responses is robust to considering alternative assumptions on the extent of the spillover effects of the minimum wage and the counterfactual trends in employment growth.

We confirm our core results of large wage effects and small employment effects using a second research design. Just as today, some states had their own minimum wage laws (on top of the federal minimum wage) in the 1960s while others did not. This variation made the 1967 reform more or less binding across states. We build a minimum wage database by state, industry, and gender spanning the 1950-2016 period. We compare states without a state minimum wage law as of January 1966 (strongly treated) to other states (weakly treated). Because the federal minimum wage was high in the late 1960s (much higher than today relative to the median wage), the 1967 reform is a particularly large shock in the strongly treated states. In this research design, the 1967 reform has a precise zero effect on employment. We are able to rule out employment elasticities greater than -0.1. The results hold for black workers in isolation, for whom employment elasticities greater than -0.2 can be ruled out.

The second—and most important—contribution of the paper is to uncover the key role of minimum wage policies in the dynamics of racial inequality. We show that the extension of the minimum wage during the Civil Rights Era can explain more than 20% of the decline in the unadjusted black-white earnings gap observed during this critical period of time. The reform reduced the gap through two channels. First, the gap between the average wage in the treated industries and the rest of the economy fell. Because black workers were over-represented in

the treated industries, this between-industry convergence reduced the U.S.-wide racial gap. Second, within the newly covered industries the wage increase is much larger for black than for white workers, and hence the reform sharply reduces the unadjusted racial gap within the treated industries. This within-industry effect accounts for more than 80% of the impact of the reform on the economy-wide racial gap. The reform also sharply reduces the adjusted racial earnings gap (i.e., the difference in earnings between black and white workers conditional on observable characteristics) within the treated industries, from 25 log points prior to 1967 to about 0 after. That is, within agriculture, laundries, etc., black workers were paid 25 log points less than white workers with similar observables (such as education, experience, number of hours worked, etc.) when the federal minimum wage did not apply, and this difference falls to close to zero after the introduction of the federal minimum wage.

Since the reform does not appear to have had significant adverse effects on black employment, the decline in the racial earnings gap translates into a similar decline in the racial income gap. The 1967 reform was thus effective at advancing black economic status.

We discuss potential explanations for the large effect of the minimum wage on racial inequality. One hypothesis is that prior to the reform, whites colluded to pay black workers low wages (below their average product) in the uncovered industries, particularly in the South. White collusion before 1967 could rationalize the low dis-employment effects of the reform. The introduction of the minimum wage reduced the possibilities of discrimination against black workers in agriculture, nursing homes, and other newly covered sectors. This insight potentially provides a new theoretical justification for minimum wage legislations when governments are concerned about forms of inequality that cannot be addressed directly through income-based tax and transfer policies. Our goal, in the years ahead, is to extend our analysis to other countries and time periods to better understand the conditions under which the minimum wage can be effective at reducing discrimination and inequality in the labor market (such as across gender or across U.S.-born vs. immigrant workers).

The remainder of the paper is organized as follows. We start by relating our work to the literature in Section 2. Section 3 presents background information on the 1966 amendments to the Fair Labor Standards Act and describes the datasets used in this research. We study the effects of the reform on wages in Section 4 and its effects on employment in Section 5. Section 6 quantifies the role of the 1967 extension of the minimum wage in the decline of the racial earnings and income gap and discusses potential explanations for our findings (e.g., white collusion). Section 7 concludes.

2 Related Literature

Our paper lies at the intersection of two core literatures in labor economics: racial inequality and the economic effects of the minimum wage.

2.1 Literature on Racial Inequality and the Civil Rights Movement

A large body of work seeks to understand what caused the decline in the racial earnings gap during the Civil Rights Era, a period that saw major policy and economic changes. Two types of explanations have been put forward: changes in the demand side of the labor market vs. changes in the supply side.

Demand side of the labor market. A cornerstone of the Civil Rights movement was the introduction of federal anti-discrimination policies. Title VII of the 1964 Civil Rights Act prohibited both employment and wage discrimination based on race.² It was enforced by the Equal Employment Opportunity Commission (EEOC) created in 1965.³ Executive Order 11246, issued in 1965 and enforced by the Office of Federal Contract Compliance, required U.S. government contractors to prohibit discriminatory practices in hiring and employment and introduced affirmative action for government contractors ([Ashenfelter and Heckman, 1976](#); [Burman, 1973](#); [Goldstein and Smith, 1976](#); [Heckman and Wolpin, 1976](#)).⁴ The role of state fair-employment practices commissions was expanded, as the EEOC started referring cases to these commissions ([Landes, 1968](#); [Heckman, 1976](#)).

A number of studies investigated whether these anti-discrimination policies increased the relative demand for black workers ([Freeman, 1973](#); [Freeman et al., 1973](#); [Vroman, 1974](#); [Freeman, 1981](#); [Brown, 1984](#); [Heckman and Payner, 1989](#); [Smith and Welch, 1986](#); [Wallace, 1975](#); [Butler and Heckman, 1977](#)). This literature focuses on employment outcomes rather than on the racial gap itself. Other studies (see, e.g., [Donohue and Heckman, 1991](#); [Wright, 2015](#); [Aneja and Avenancio-Leon, 2018](#)) also considered the role of the Voting Rights Act of 1962 and 1965, as well as other federal initiatives (such as school desegregation) in narrowing the racial gap.

²Title VII also prohibited employment and wage discrimination based on sex, color, religion and national origin.

³Most employers were covered by the Equal Employment Opportunity Commission, except firms with fewer than 100 employees (later reduced to 25 and then 15 employees), firms not engaged in interstate commerce, the self-employed, and state and local governments. Unions and employment agencies were covered.

⁴Discrimination on the basis of sex became part of the contract-compliance program in 1967. Affirmative action against sex discrimination was required in 1971.

One key difficulty faced in this literature is the fact that federal government policies affected the nation as a whole, making it difficult to identify their causal impact.⁵ It is also difficult to obtain good measures of government anti-discrimination activity. Most of the literature used either sparse intercensal wage data or aggregated time series that make it difficult to isolate the contribution of these policy changes at the macro level.⁶

Supply side of the labor market. On the supply side, the literature has identified two important developments contributing to the decline in the racial gap.

First, educational outcomes improved for African Americans. [Smith and Welch \(1989\)](#); [Lillard et al. \(1986\)](#) emphasize the relative increase in the number of years of schooling for black workers. They concluded that an increase in school quantity can explain about 20-25% of the narrowing of the black-white wage gap in the late 1960s. [Card and Krueger \(1992; 1993\)](#) find that about 15-20% of the reduction in the racial wage gap owes itself to improvements in school quality for black children.⁷ Moreover, a body of work argues theoretically that the returns to schooling could have increased for black workers during the 1960s as a result of the tightening of the labor market ([Osborne, 1966](#); [Tobin, 1965](#); [Friedman, 1962](#)). [Heckman and Payner \(1989\)](#) do not find empirical support for this theory, however.

Second, the increase in income transfers in the context of President Johnson's Great Society may have led to a reduction in the labor force participation of black workers with low levels of education ([Butler and Heckman, 1977](#)). [Donohue and Heckman \(1991\)](#) find that this factor can explain about 10%-20% of black-white wage convergence during the Civil Rights movement. Other supply shift stories, such as northern migration of African Americans, have been found to play a minor role.⁸ Overall, [Donohue and Heckman \(1991\)](#) find that supply-side factors can explain about 55% of the decline in the racial gap during the Civil Rights Era.

Our study pushes the literature forward in two directions. First, our paper is the first to highlight the role played by the 1967 minimum wage extension in the decline of racial inequality. This factor turns out to be quantitatively important, comparable in size to the

⁵The identification problem is particularly acute for studies of the role of the Equal Employment Commission, as Title VII covers all firms in the economy. [Heckman and Wolpin \(1976\)](#) also showed that it is difficult to assess the causal impact of the OFCC as the contract status of a firm is endogenous (government contracts are awarded to less discriminatory firms).

⁶A notable exception is [Heckman and Payner \(1989\)](#), who focused on the textile manufacturing industry in South Carolina. They were, however, unable to infer economy-wide estimates based on this study.

⁷[Card and Krueger \(1992\)](#) do not find evidence of any contribution of the relative increase in school quantity to the reduction in the racial earnings gap in the late 1960s.

⁸[Smith and Welch \(1986\)](#) note that northern migration actually slowed in the mid-1960s; their table 18 shows that the percentage of black men living in the South was 74.8 in 1940, 57.5 in 1960, and 53.1 in 1980.

impact of improvements in school quality found by [Card and Krueger \(1992\)](#) and in school quantity found by [Smith and Welch \(1986\)](#). Our paper moves us closer to a full quantitative understanding of what caused the decline in the racial earnings gap in the 1960s.

Second, our study solves a key puzzle in the literature on the dynamics of racial inequality. Figure 1a plots the evolution of the unadjusted racial earnings gap since the early 1960s, measured as the mean log difference in average annual earnings between white and black workers. As is apparent from this figure, a lot of the decline happened in just two years: 1967 and 1968. Neither the demand nor supply factors described above can easily explain the specific timing of the reduction in the racial earnings gap. Anti-discrimination policies were rolled out gradually from 1964 onwards; the enforcement powers of the Equal Employment Opportunity Commission gradually increased over time ([Wallace, 1975](#); [Butler and Heckman, 1977](#)).⁹ Similarly, there is no sudden change in schooling quantity or quality for blacks in 1967; educational improvements occurred gradually. Income transfers also rose progressively throughout the 1960s and 1970s.¹⁰ By contrast, the 1967 extension of the minimum wage can explain why a lot of the decline in the racial earnings gap took place in 1967. Figure 1b shows indeed that the unadjusted racial earnings gap fell sharply in the newly covered industries relative to the previously covered ones precisely in 1967.

2.2 Minimum Wage Literature

A huge literature studies the economic effects of the minimum wage. Our paper contributes to this literature in several ways.

First, our study is the first to provide causal evidence on how minimum wage policy can affect racial economic disparities. A large body of work discusses the efficiency costs of the minimum wage and focuses on its employment effects (see, e.g., [Card, 1992](#); [Card et al., 1993](#); [Neumark and Washer, 1992](#); [Card and Krueger, 1995](#); [Neumark and Washer, 2008](#); [Dube](#)

⁹It is only in 1972 that the Equal Employment Opportunity Commission was given the power to initiate litigation. Before 1972, it could not file lawsuits to enforce Title VII and could only refer cases to the Justice Department or briefs as "friends of the court," see [Brown \(1982\)](#). The EEOC's backlog of complaints increased gradually over the late 1960s and 1970s (see, e.g., p. 211 of the U.S. Civil Rights Commission, 1977: <https://www2.law.umaryland.edu/marshall/usccr/documents/cr12en22977.pdf>).

¹⁰Medicare and Medicaid were introduced in 1966, but were initially small quantitatively (1.7% of all government transfers in 1966) before gradually increasing to 4.8% of all transfers in 1970, 6.4% in 1975, and 8.2% in 1980. See table II-C3b in [Piketty et al. \(2018\)](#) available at <http://gabriel-zucman.eu/usdina/>. Food stamps was introduced in 1964, the rolled out across counties. It's only in 1975 that all counties were mandated to offer a food stamp program ([Hoynes and Schanzenbach, 2009](#)). Aid to Families with Dependent Children (AFDC) expanded cash benefits in early 1970s ([of Health & Human Services, 2001](#)). Taken together, all transfers accounted fo 24% of the national income per adult in 1961, 24% in 1966, and 28% in 1970, 32% in 1975. See table II-C3b in [Piketty et al. \(2018\)](#) available at <http://gabriel-zucman.eu/usdina/>.

et al., 2010; Cengiz et al., 2018). The literature also studies the effects on wage inequality (see, e.g., Blackburn et al., 1990; DiNardo et al., 1996; Lee, 1999; Autor et al., 2016) and family incomes (Gramlich, 1976; congressional budget office, 2014; Dube, 2017). But to date the interplay between the minimum wage and racial inequality has not been investigated in a causal research design thus far.

Second, our paper provides evidence on the economic effects of very large minimum wage increases. The 1967 reform is a large shock to the treated industries in states that did not have a state minimum wage, because for them the wage floor moves from zero to the prevailing federal minimum wage, which was at a high level in the late 1960s. On top of extending the minimum wage to new sectors, the 1966 FLSA increased the federal minimum wage from \$1.25 in 1966 to \$1.4 in 1967 and \$1.60 from 1968 on (the equivalent of \$9.91 in 2017 dollars, i.e., its historical peak). Bailey et al. (2018) investigate how the high nationwide minimum wage mandated by the 1966 Fair Labor Standards Act affected employment, exploiting state-level differences in the bite of a national minimum wage due to differences in standard of living. Their results show little evidence of disemployment effects for men, consistent with our results. Since our paper focuses on different questions (the impact of the minimum wage on the black-white income gap, and the effect of the 1967 reform on the newly covered industries), uses different research designs (cross-industry difference-in-differences and bunching) and relies in part on different data (our newly digitized BLS tabulations), we view our projects as complementary. More broadly, we contribute to a recent literature that analyzes sharp changes in the minimum wage, either in the United States at the city level (see, e.g., Jardim et al., 2018) or in foreign countries (e.g., Harasztsosi and Lindner, Forthcoming; Engbom and Moser, 2018). Evidence about the effects of large hikes can help inform current policy discussions in the United States, where a number of both local and federal policy-makers are implementing or considering large increases in minimum wages.

Third, we add to the burgeoning literature on bunching estimation applied to the minimum wage. One of the advantages of the bunching approach is that it offers transparent graphical evidence on the employment effects of minimum wage hikes within large industries.¹¹ We are also able to track where in the wage distribution jobs were created or destroyed.

Finally, we contribute a new database of minimum wage legislation by state, industry, and gender spanning the 1950-2016 period. Looking forward, this database could be used to exploit historical changes in minimum wage legislation across industries or gender (in

¹¹By contrast, the bulk of the literature has focused on teen employment or workers in specific industries, typically restaurants (Abowd et al., 2000; Allegretto et al., 2017; Neumark et al., 2014).

contrast to the bulk of the literature that focuses on cross-state variation).

3 The 1967 Extension of the Minimum Wage and Data

3.1 The 1966 Fair Labor Standards Act

Political economy of the reform. The Fair Labor Standards Act (FLSA) of 1938 introduced the federal minimum wage in the United States. Millions of workers became subject to a wage floor. The coverage of the Act, however, was incomplete: a number of sectors were excluded. The 1938 FLSA covered about 53% of the U.S. workforce (see figure 3) in the manufacturing, transportation and communication, wholesale trade, finance and real estate sectors (see the complete list of covered sectors in figure 2). President Roosevelt intended to cover the economy as a whole but faced resistance in Congress, particularly from Southern Democrats (Phelps, 1939). The law enacted in 1938 stipulates that only employees engaged in interstate commerce or the production of goods for interstate commerce be covered (Daugherty, 1939). In practice, this meant that a number of sectors where black workers were overrepresented, such as agriculture, were excluded. The 1938 Fair Labor Standards Act, as a number of other programs passed in the 1930s and 1940s, had a discriminatory dimension (Katznelson, 2006; Mettler, 1994; Rothstein, 2017).

Over time, a series of amendments to the 1938 FLSA extended the minimum wage to the rest of the economy. In this paper, we focus on the 1966 FLSA amendments, the largest expansion of the federal minimum wage.¹² The 1966 FLSA amendments introduced the federal minimum wage (as of February 1st, 1967) in the following sectors: agriculture, nursing homes, laundries, hotels, restaurants, public schools, and hospitals. These sectors employed about 8 million workers (see figure 3) in 1967, or about 21% of the U.S. workforce. Critically, nearly a third of all U.S. black workers worked in the sectors covered for the first time in 1967, compared to about 18% of all U.S. white workers. Conscious of this, President Johnson declared when signing the amendments that: "[The minimum wage law] will help minority groups who are helpless in the face of prejudice that exists. This law, with its increased minimum, with its expanded coverage will prevent much of th[e] exploitation of the defenseless—the workers who are in serious need" (Johnson, 1966).

¹²Using CPS data, we estimate that 53% of the U.S. workforce was covered by the 1938 FLSA as of 1966, an additional 16% was covered by the 1961 amendments (which introduced the minimum wage in retail trade and construction), and an additional 22% by the 1966 amendments, which are the focus of this research. The remaining 9% of the workforce (domestic workers, and workers in public administration) were covered after 1966.

A sharp change in minimum wage policy. The 1967 extension of the minimum wage represented a sharp increase in the minimum wage in many sectors of the economy. The ratio between the federal minimum wage and the median wage rose from 0% to 38% in 1967 in the newly covered industries (see figure 5). The minimum wage introduced in these sectors in 1967 (\$1) was initially below the federal minimum wage, but converged to the level of the federal minimum wage by 1971, except in agriculture where convergence was only complete in 1977.¹³ As a result, the ratio between the federal minimum wage and the median wage continued to increase in the newly covered sectors over time and reached 40%-50% during the 1970s, a level close to the one seen in the industries that were covered in 1938.

3.2 Data Used in our Analysis

We use four data sources to study the 1967 extension of the minimum wage: industry wage reports published by the Bureau of Labor Statistics that we digitized; Current Population Survey micro-files going back to 1962; U.S. decennial census data; and data on state minimum wage legislation by industry and gender.

Bureau of Labor Statistics industry wage reports. The BLS conducted regular establishment surveys in the 1960s, 1970s, and 1980s to monitor the implementation of the amendments to the Fair Labor Standards Act of 1938. The surveys were requested by the Department of Labor's wage and public contracts divisions. The BLS focused on collecting information on the distribution of employer-paid hourly earnings.¹⁴ Hourly earnings exclude premium pay for overtime, work on weekends, holidays and late shifts. Our data come in the form of tabulations that provide detailed distributions of hourly earnings by 5- and 10-cent bins and the number of workers in each bin. The hourly wage distributions are available for the United States as a whole and by regions (Northeast, Midwest, South and West), occupations (e.g., tipped workers vs. non-tipped workers for the restaurant and hotel industries; inside-plant workers vs. office workers in laundries; bus drivers; clerical employees; food servers; custodial employees; maintenance employees in schools, etc.), gender, and type of area (metropolitan vs. non-metropolitan). Figure 6a shows an example of the raw tabulations for the laundries sector. The BLS data allow us to transparently study the evolution of the

¹³In all sectors except agriculture, the minimum wage was introduced at \$1 an hour in February 1967. Then the minimum wage was raised annually in 15 cent-an-hour increments, effective each February 1 through 1971, to \$1.60 an hour.

¹⁴In addition, the BLS collected information on weekly hours of work, and supplementary wage practices, such as paid holidays and vacation, health insurance and pension plans.

hourly wage distributions in each sector over time and to investigate the heterogeneity of the impact of the 1967 reform across many dimensions.

For the purposes of this project, we digitized over 1,000 hourly wage earnings distributions every year from 1961 to 1969.¹⁵ We built a database of hourly wage distributions for the industries covered in 1967, as well as for a set of industries covered in 1938—mainly from non-durable, low-wage manufacturing sectors;¹⁶ see figure 6b.

Current Population Survey data. The Census Bureau and the Bureau of Labor Statistics have conducted the Current Population Survey—a monthly household survey—since the 1940s. However, public use files are only available for the years 1962 and onwards. We use data from the March CPS, more precisely the Integrated Public Use Microdata Series (IPUMS) from 1962-1980.¹⁷ IPUMS released the 1962-1967 files with a harmonized industry variable in 2009. Since incomes in the March CPS of year t refer to incomes earned in calendar year $t - 1$, we can track annual earnings from 1961 onwards (e.g., starting six years before the 1967 extension of the minimum wage). We study earnings through to 1980, i.e., two years after the full convergence of the minimum wage in agriculture to the federal minimum wage level.

One advantage of the CPS over the BLS tabulations is that it provides rich individual worker-level data, e.g., gender, race, and education levels (30 categories). We harmonized industry classifications across years; our harmonized industry variable includes 23 different industries.¹⁸ This is more detailed than the 2-digit NAICS code but a bit coarser than the 3-digit NAICS code. For instance, we are able to separate restaurants from the rest of the retail sector, but we cannot separate hotels and lodging places from laundries and other professional services due to data limitations in the 1962-1967 CPS. The BLS industry wage reports have hourly wage information for more detailed sectors.

There are three main limitations involved in using March CPS data to analyze the 1967 reform:

First, we only directly observe annual earnings in the CPS files of the 1960s and early

¹⁵We collected the BLS Industry Wage reports from: <https://fraser.stlouisfed.org/series/5293#4603>
Another resource is: <https://libraryguides.missouri.edu/pricesandwages/1970-1979>

¹⁶More precisely, we digitized data for cigars, cotton textiles, flour and grain mills, hosiery, leather tanning, men's and boys' suits and coats, men's and women's footwear, men's and boys' shirts, miscellaneous plastic products, and wood household furniture. About 35 more industries are also available.

¹⁷Downloaded from <https://cps.ipums.org/cps-action/samples>, see Flood et al. (2018).

¹⁸We used the information contained in the original industry variable from 1962 to 1967 and in the industry variable created by IPUMS from 1968 onwards that recodes industry information into the 1950 Census Bureau industrial classification system. For more information about the construction of the integrated industry codes in IPUMS starting in 1968, see usa.ipums.org/usa/chapter4/chapter4.shtml.

1970s, not hourly wages.¹⁹ In the CPS regressions shown below, our main outcome of interest will thus be annual earnings, and we will control for the number of weeks worked and the numbers of hours worked within a week. As we shall see, the wage effects of the reform estimated using the CPS will turn out to be very consistent with the effect on hourly wages seen in the BLS industry wage reports.

Second, pre-1968 CPS micro files have less observations than in later years,²⁰ which increases the level of noise compared to more recent years. There is a difference in employment *counts* between the 1960 decennial Census data and the early CPS files. However, conditioning on being employed, annual earnings in March CPS and Census are perfectly in line (see figure A18).²¹ However, the employment *shares* by industry and race match the information contained in the decennial census data. Further, we have checked that CPS employment is consistent in both levels and shares with the 1970 and 1980 censuses. The limitation of the CPS in the early 1960s does not affect our cross-industry or cross-state difference-in-differences point estimates, but it increases standard errors for the years 1962-1967.

Third, from 1968 to 1976, the IPUMS data report information by state groups as opposed to states. We have information for 21 state groups across all years. The states that were grouped together were small (e.g., large states such as California and New York are always one single state) and geographically close to each other (see figure A17). We checked that the borders of the state groups do not cross region or division lines. Importantly, the states within each group have similar state minimum wage policies. Thus this data limitation is unlikely to be a threat to our cross-state empirical strategy. In our analysis using CPS data, for simplicity we use the term "states" to refer to "state groups."

U.S. Census data. We use the 1-100 national random sample of the population from the 1940, 1950, 1960, 1970, and 1980 decennial censuses to compute the share of workers covered by the Fair Labor Standards Act of 1938 and its subsequent amendments.²² We also use

¹⁹The CPS started to collect information on hourly and weekly earnings in 1973 in the May supplement of the survey. Starting in 1979, the earnings questions were asked each month for people in the outgoing rotation groups.

²⁰About 15,000 observations in our sample in March CPS 1962-1965, then around 30,000 through the mid-1970s, see table A3.

²¹Table ?? shows that we estimate the number of employed persons in March CPS 1962 and 1963 in our sample is lower (average of 23,181,837 over the those two years) than the estimate we get in 1960 in Census data (33,244,820). Starting in March 1964, the *numbers* of people employed is in line with Census data. The black-white and the men-women employment shares however are similar in March CPS 1962 and 1963 and Census 1960.

²²Census data were accessed from the IPUMS website at <https://usa.ipums.org/usa-action/samples>, with variables—in particular the industry variable—harmonized with the CPS files, see Ruggles et al. (2018).

Census data to show that the employment shares by industry, gender, and race in 1960 are consistent with the early CPS files. More details are provided in the appendix.

Minimum wage database. We use the report of the Minimum Wage Study Commission (1981) to build our minimum wage database by state, gender, and industry.²³ We cross-check the information in the Minimum Wage Study Commission (1981) with the information contained in the Department of Labor Handbook on women workers (1965).²⁴ In 1965, 31 states and the District of Columbia had minimum wage laws. Details are provided in the appendix.

4 The Wage Effects of the 1967 Reform

4.1 Identification Strategy, Sample, and Summary Statistics

We start by studying the effect of the 1967 extension of the minimum wage on the dynamics of wages in the CPS. Our baseline empirical approach is a cross-industry difference-in-differences research design: we compare the dynamics of wages in the newly vs. previously covered industries, before and after 1967. The identification assumption is that absent the 1967 reform, wages in the 1967 industries (treated) and in the 1938 industries (control) would have evolved similarly. We provide graphical evidence that wages in the two groups evolved in parallel before 1967, lending support to our identification assumption (see figure 7). We also show that workers do not move from one group of industries to the other around 1967. There is no discontinuity in the share of U.S. workers employed in the treated vs. control industries, nor in the share of black and white workers in those groups; see figure ???. As discussed below, our effects are robust to the inclusion of a wide range of controls and time-varying effects, such as state, industry, and race linear trends, making it unlikely that our effects are confounded by contemporaneous changes differentially affecting workers in the treated vs. control industries.

Our sample includes all prime-age workers, i.e., aged 25 to 55. Workers younger than 21 were subject to a different, lower minimum wage that is not the focus of our study. We also exclude the self-employed, workers in group quarters, unpaid family workers, and individuals working less than 13 weeks a year and less than 3 hours a week (to remove noise

²³The report was downloaded from <https://cpb-us-e1.wpmucdn.com/blogs.rice.edu/dist/f/3154/files/2015/11/Minimum-Wage-Study-1983-Carter-Administration-1hkd1cv.pdf>.

²⁴Accessible here: https://fraser.stlouisfed.org/files/docs/publications/women/b0290_dolwb_1965.pdf.

generated by very low annual earnings). Throughout the analysis, control industries include all industries that were covered in 1938 (that is, we exclude from the analysis the industries added in 1961, 1974, and 1986, which together employed about 25% of the workforce, see A). As shown by table 3, our results are not sensitive to these sample restrictions. All wages are converted to 2017 dollars, using the CPI-U-RS price index from the Bureau of Labor Statistics.

Table 2 presents summary statistics; the data are averaged over 1965 and 1966. On the eve of the 1967 extension of the minimum wage, workers in the 1967 industries (our treated group) were paid 30% less on average than workers in the 1938 industries (control). The difference in average annual earnings between black and white workers was the same in both groups of industries. Female workers were overrepresented in the industries covered in 1967, among both white and black workers. In both the control and treated industries, black workers were less educated than white on average (around 40-45% have more than 11 years of schooling vs. 65-75% for white workers). The distribution of white individuals across regions is the same in the treatment and control groups. Black workers were predominantly in the South, and those working in the treated industries were more concentrated in the South (56%) than those working in the control industries (42%). White and black workers were employed in different occupations. Finally, the majority of workers worked full-time, full-year. However, the share of workers that are full-time full-year was higher in the treated industries (88% for white and 79% for black workers) than in the control industries (69% for white and 67% for black workers).

We estimate the following difference-in-differences model:

$$\log w_{ijst} = \alpha + \sum_{k=1961}^{1980} \beta_k \text{Covered 1967}_j \times \mathbb{1}[t = k] + \delta_j + \delta_t + \mathbb{X}'_{ijst} \Gamma + \varepsilon_{ijst} \quad (1)$$

where $\log w_{ijst}$ denotes the log annual earnings of worker i in industry j , state s , in year t .²⁵ The dummy variable Covered 1967_j equals 1 if worker i works in an industry covered in 1967, 0 if they work in an industry covered in 1938. t is the year when the reform was implemented (1967), and δ_j and δ_t are industry and year fixed effects, respectively. The coefficient of interest, β_k , measures the effect of the 1967 reform k years after the baseline year (1965 in what follows). In all our analyses, we control for the following worker-level characteristics contained in the vector \mathbb{X}_{ijst} : gender, race, experience, experience squared, education, occupation, marital status and part-time or full-time status. We also control for the number of weeks worked,²⁶

²⁵Year t corresponds to the calendar year during which income was earned, i.e. 1961 in CPS 1962, 1962 in CPS 1963, etc.

²⁶The CPS contains information on the number of weeks worked last year, by categories: 1-13 weeks, 14-26 weeks, 27-39 weeks, 40-47 weeks, 48-49 weeks, and 50-52 weeks.

and the number of hours worked.²⁷ In section 5 below, we show that the reform did not affect the number of hours worked per year conditional on working (see figure 11a and table 8).²⁸ More generally, adding individual-level controls doesn't affect our results suggesting that there is no sorting on observables (see figure A19). It increases however the precision of our estimates.²⁹ We report standard errors clustered at the industry level to allow for arbitrary dependence of ε_{ijst} across year t within industry j . We view clustering here mainly as an experimental design issue where the assignment is correlated within the clusters; see Abadie et al. (2017)). This is why we cluster by industry in our main specification and not by other dimensions across which there may be unobserved heterogeneity within clusters. The clustering is at the industry rather than at the industry-year level to account for serial correlation across years (Bertrand et al., 2004).

4.2 Baseline Estimates of the Effect of the 1967 Reform on Wages

Figure 7 shows the effect of the 1967 reform on the log annual earnings of treated workers relative to control workers. Before the implementation of the reform in February 1967, the annual earnings of workers in the treated vs. control industries evolved in parallel: the point estimates for the years 1961-1966 are centered around 0 and are not statistically different from 0.

Starting in 1967, annual earnings increased substantially—by about 5%—for workers in the newly covered industries relative to workers in the control industries. Relative wages continued to increase after 1967 through to 1971 when the treatment effect peaks (+7%). This pattern of increase is consistent with the fact that in the newly covered industries, the minimum wage was first introduced in 1967 at a level (\$1 in nominal terms) below the prevailing federal minimum wage (\$1.25), before gradually converging to the level of the federal minimum wage over the 1967-1971 period (except in agriculture); see figure 2. After

²⁷The CPS contains information on the number of hours worked last week.

²⁸The annual number of hours worked is constructed as the ratio between the annual wage (as directly measured in the CPS) and the hourly wage (as re-constructed). We re-construct a measure of hourly wage by dividing the annual wage by the product of the number of hours worked per week and the number of weeks worked per week (measured as the midpoint of each weeks worked interval). Because we do not observe the exact number of weeks worked per year, the variance of the measure of the hourly wage thus obtained is underestimated. Therefore, we further smoothed this hourly wage measure by adding or subtracting to it a random number generated from a uniform distribution over the interval[-\$0.25,\$0.25] (after converting our hourly wage measure to 2017\$).

²⁹Adding or not individual-level controls doesn't affect at all our medium-run point estimates as shown on figure A19. Starting in 1971, the point estimates with all the individual-level controls are slightly higher than the point estimates in our baseline specification. One possibility is that the extension of the minimum wage has a positive effect on the number of years of schooling in the medium and long-run.

1971, the point estimates stabilize and the wage increase persists over time. Overall, the average wage of workers in the newly covered industries is 0.066 log points (i.e., 7% higher) higher relative to the average wage of workers in control industries in 1967-1972 compared to 1966 and 0.051 log points (i.e., 6%) higher in 1973-1980 relative to 1966; see table 3, column 1. These effects are statistically different from zero at the 5% level.

Actual vs. predicted effects. The magnitude of the wage estimates are consistent with the predicted wage increase obtained from assigning the 1967 minimum wage to workers in the treated industries who were below the 1967 minimum wage in 1966. We compare the actual effects of the reform to the predicted effects of the reform under the following three assumptions: first, there is perfect compliance with the reform; second, there is no employment effect; and finally, there are spillovers up to 115% of the 1967 minimum wage.

We start from the distribution of hourly wages in the 1966 CPS (constructed using the information available on annual earnings, the number of weeks worked, and the number of hours worked; see footnote 28 above). From there, we estimate that 16% of workers in the treated industries were below the 1967 minimum wage in 1966; see column (1) in table 4). For these workers, the average increase resulting from moving straight to the \$1 nominal minimal wage introduced in 1967 is 34%; see column (2). The predicted wage effect for all workers in the treated industries is $16\% \times 34\% = 5.5\%$; see column (4). This is close to the estimated effect of 5% found in our wage regression in 1967.³⁰ The predicted wage effect is slightly larger than the observed effect (5.5% vs. 5.3%), however, which could be due to several factors. There is measurement error in hourly wages, there may be imperfect compliance with the reform, and there may be effects of the reform on employment. We explore the latter ones in section 5.

Effects by education. The wage effect shows up primarily where one would expect to see it, i.e., for workers with low levels of education. We separately estimate the above model for workers with 11 years of schooling or less vs. more than 11 years of schooling; see figure 8a. For workers with low levels of education, wages increase by 10% in 1967 in the newly covered industries, above and beyond wage growth in the previously covered industries. The effect is much smaller (4% in 1967) among highly educated workers. These results are consistent with the idea that our empirical design captures the effect of the extension of the minimum

³⁰Since we make predictions for 1967 alone, we compare the predicted effects to our wage coefficient obtained for 1967 alone (see figure 7 rather than to the pooled estimate for 1967-1972 presented in table 3).

wage in 1967 and not a general trend affecting all workers (including high-skill) in the 1967 industries. These estimated effects are well in line with our predictions, as shown in table 4.

Wage effects using hourly wage BLS data. We confirm our wage results using the BLS industry wage reports instead of the CPS data. We implement the same cross-industry difference-in-differences research design: we compare the dynamics of wages in the newly vs. previously covered industries, before and after 1967. Control industries here include non-durable manufacturing industries (see figure 6b for the list of industries we digitized and years available), which were covered by the minimum wage in 1938.³¹ We adapt our cross-industry design to the nature of the BLS data, and estimate two models: (i) a similar difference-in-differences model as described in equation 1; and (ii) a triple difference-in-differences model defined as follows:

$$\begin{aligned} y_{jrt} = & \alpha + \beta_1 \text{Covered 1967}_j \times \text{Post}_t \times \text{South}_r \\ & + \beta_2 \text{Covered 1967}_j \times \text{Post}_t + \beta_3 \text{Post}_t \times \text{South}_r \\ & + \beta_4 \text{Covered 1967}_j \times \text{South}_r + \nu_j + \eta_r + \lambda_t + \varepsilon_{jrt} \end{aligned} \quad (2)$$

where y_{jrt} denotes log hourly wages in industry j , region r , and year t ; Covered 1967_j indicates whether an industry was covered in 1967; ν_j , η_r , and λ_t are industry, region, and year fixed effects. Our standard errors are clustered at the industry level. In addition, $\hat{\beta}_4$ in this specification allows us to investigate whether the wage effects are larger in the South. This regression is run on two samples: a strict sample that only includes industries with both pre- and post-reform data and years with both control and treatment industries, and a full sample including all our digitized data.

Table 5 shows that within the strict sample, wages in the newly covered industries jump by 8% relative to wages in non-durable manufacturing after the reform (1967-1969) relative to before. The magnitude of the rise is very similar to the 7% wage increase estimated using CPS data. The wage increase is higher for treated industries in the South relative to non-durable manufacturing industries in the non-South (+14%). The pattern and magnitude of the wage results are similar in the full sample of BLS industries.

³¹Manufacturing represents more than 50% of all 1938 industries. Non-durable manufacturing represents about half of manufacturing in terms of number of workers employed. In addition, wages in non-durable and durable manufacturing follow strictly similar trends, as can be seen in the CPS. We therefore believe that the subset of industries in the non-durable manufacturing industries form a good control group in this empirical setting.

4.3 Robustness Tests and Other Estimation Strategies

The main threat to our baseline identification strategy are shocks happening in 1967 that differentially affect workers in treated vs. control industries. In what follows we present a number of checks and tests for the wage effects we estimate. We first consider two types of shocks—state shocks and sectoral shocks—before considering additional checks and studying alternative research designs.

Robustness to state shocks. If treated industries were concentrated, say, in the South and if there was a sudden convergence in wages between workers in the South and in the North in 1967, then our estimates would be confounded. To address this concern, in Column 2 of table 3 we add state fixed effects and state linear trends to the controls of our baseline model. The inclusion of state fixed effects and state linear trends does not change the magnitude or the pattern of the estimated wage effect.

Robustness to sectoral shocks. One might be concerned about shocks happening in some treated industries, such as agriculture (e.g., mechanization). In column 3 of table 3 we exclude agriculture from our sample to see whether the results still hold. We find that the magnitude of the wage effect (6%) is only a bit lower than when agriculture is included (7%). One interpretation is that there is some heterogeneity in the wage response across industries. This interpretation would be consistent with the fact that the bite of the minimum wage is higher in agriculture than in the other newly covered sectors.

Additional robustness tests. We report the following additional robustness tests. First, we vary the sample selection criteria. In Column 4 of table 3 we restrict the sample to full-time workers only. The point estimate (0.065 log points) is similar to the baseline estimate reported in column 1. This result suggests that the 1967 reform did not affect full-time and part-time workers differentially. In column 5, we winsorize the top and the bottom of the distribution of the outcome and the control variables at the 5% level; the point estimate remains unchanged (0.061 log points). This result shows that outliers (in particular at the bottom of the distribution) do not drive our results. In column 6, we test whether the precision of our results is robust to alternative ways of clustering standard errors. Since the intensity of the treatment varies by state, and since there might be reasons to believe that unobserved components of the annual wage for workers are correlated within states, we implement a

two-way clustering (industry and state levels). The precision of our results is unchanged.³². Finally, following Cameron et al. (2008) we implement a wild bootstrap approach to cluster standard errors, as in both the state and industry dimensions we have a small number of clusters (16 clusters when clustering by industry and 22 for states). Wild bootstrap improves slightly the precision of our estimates.

Wage effect in a cross-state research design. As a last robustness test, we consider another research design that leverages geographic variation in the bite of the reform. Just as today, many states had their own minimum wage law in the 1960s, thus already covering the industries that became covered by the federal law in 1967. We compare workers in states that already had a minimum wage law before the reform (weakly treated) to workers in states that did not (strongly treated). Figure 9 shows that states with no minimum wage law as of 1966 were concentrated in the South, but not exclusively; they are also present in the West and the Midwest. Our identification assumption is that absent the 1967 reform, wages in weakly and strongly treated states would have followed the same trend. We estimate the following difference-in-differences model, pooling together our estimates over three periods k , with $k \in [1961-1966], [1967-1972] \& [1973-1980]$:

$$\log w_{ist} = \alpha + \sum_k \beta_k \text{Strongly treated state}_s \times \delta_{t+k} + \mathbb{X}'_{ist} \Gamma + \nu_s + \delta_k + \varepsilon_{ist} \quad (3)$$

where $\text{Strongly treated state}_s$ is an indicator for a state with no minimum law in January 1966. The coefficient of interest, β_k , measures the effect of the 1967 extension of the federal minimum wage k years after or before the year chosen as a baseline (1965 in this case). We control for the same workers' characteristics as in our cross-industry design. Standard errors are clustered at the state level. We find that wages in the strongly treated states grew on average by 3% more than in weakly treated states just after the reform and over the period 1967-1972 (see table ??). As in our cross-industry design, the effect is concentrated on workers with low levels of education.

³²Together with the fact that the standard errors are much lower when the clustering is implemented at the state level rather than at the industry level, this result indicates that the correlation in the unobserved components of workers' wages within industries is higher than the correlation in the unobserved components of workers' wages within states

4.4 Wage Effects by Race

We now turn to our second key finding: the magnitude of the wage response to the 1967 reform is much larger for black workers (12%) than for white (5%).

To establish this fact, we run the same regression as in our benchmark cross-industry design, but for white and black workers separately (see Table 6). That is, we compare white workers in the treated industries to white workers in the control industries, before vs. after 1967 (blue line in figure 8b). Similarly, we compare black workers in the treated industries to black workers in the control industries (dark line in figure 8b), controlling for observables as in our benchmark specification. Strikingly, black workers in the treated industries saw their wage rise 12% more than black workers in the control industries starting in 1967. Because the wages of black workers in the control industries are themselves rising faster than the wages of white workers in the control industries, the wage of black workers in the treated industries rises much faster (+20%) than average (black plus white) wages in the control industries (see Appendix Figure A20).

5 The Employment Effects of the 1967 Reform

5.1 Bunching Estimator

Methodology. We start by studying the effect of the 1967 extension of the minimum wage on overall employment in the treated industries—and the employment of low-paid workers in particular—using the BLS industry wage reports. We proceed as follows. Following Harasztosi and Lindner (Forthcoming), we first inflate the observed 1966 wage distributions (expressed in nominal dollars of 1966) by the nominal 1966-1967 growth rate of per adult U.S. national income (+ 4.4%). We then count the number of workers at the bottom of the wage distribution in 1966 (i.e., at wage levels affected by the minimum wage, adjusted for the growth of the economy) and compare this count to the number of workers observed in 1967 at these same wage levels. We perform a similar computation at the top of the distribution (i.e., at wage levels not affected by the minimum wage). By comparing the 1966-1967 growth rate of employment at the bottom vs. at the top, we can assess the effect of the minimum wage on the number of low-wage workers employed. The identification assumption is that absent the reform, the number of people employed at the bottom of the distribution would have evolved similarly to the number of people employed at the top within treated industries between 1967 and 1968.

In our baseline estimate, we assume that the part of the distribution affected by the minimum wage is the entire distribution up to 1.15 times the federal minimum wage, i.e. up to \$1.15 in 1967. That is, we allow for spillover effects of the minimum wage up to 115% of the minimum wage, consistent with the spillover effects estimated in the recent minimum wage literature (see, e.g., [Dube et al., 2018a](#)). We also assume that the minimum wage does not have any impact in the top 30% of the distribution for treated industries overall, which roughly corresponds to wages above \$1.70 in 1967. This wage level also corresponds to 1.15 times the highest state minimum wage in force in 1967 (\$1.50 minimum in New York). In the robustness tests presented below, we investigate how varying the first, second, or both assumptions together affects the results.

Case study: laundries in the South. We start by implementing this estimation strategy in laundries in the South. This case study is interesting for three reasons. First, laundries are a low-wage industry: in 1963, 85% of the workforce was paid below \$1.25 (the federal minimum wage applicable in sectors covered since 1938), including at very low wage levels (below \$0.50 an hour). Second, black workers represent 40% of the workforce as opposed to 14% in the treated industries at the national level. Third, because southern states did not have any state minimum wage legislation, the 1967 reform is a large shock. If the 1967 extension of the minimum wage had large dis-employment effects, this should be visible in laundries in the South.

Figure 10a shows the hourly wage distribution in that sector from 1963 to 1968. In 1963 and 1966 the wage distribution is smooth, apart from spikes at round numbers, a well documented phenomenon ([Kleven, 2016](#); [Dube et al., 2018b](#)). The shape of the wage distributions is the same in 1963 and 1966, except that the distribution shifts to the right as the economy grew and prices increased. Where the minimum wage was introduced at \$1 in 1967, by contrast, a very large spike in the earnings distribution appears at \$1. There is bunching at the minimum wage. The spike moves to the right in 1968 as the minimum wage increased to \$1.15.

Table 7 estimates employment effects by applying the methodology described above. We find that employment below \$1.15 in 1967 is 1.5% higher than 1966 employment below \$1.10 (i.e., adjusted for the observed economy-wide nominal growth rate). Similarly, 1967 employment above \$1.30 (roughly the top 30% of the distribution) is 3% higher than 1966 employment above \$1.25. Assuming that absent the reform, employment at the bottom would have grown at the same rate as at the top (i.e., by 3.0%) we conclude that the reform had small dis-employment effects. These effects are small in the sense that the differential growth

of employment (1.5% vs. 3.0%) is small relative to the wage increase for treated workers (+18.2%). The implied employment elasticity is -0.08. This result is somewhat sensitive to the assumptions made about the spillover effect of the minimum wage, however. If we assume there is no spillover (i.e., if we compare employment below \$1.05 in 1967 to employment below \$1.00 in 1966), we find a zero effect of the reform on employment (+2.8% compared to +3% at the top, with an average wage increase of +27.1%, i.e., an employment elasticity of -0.01). Allowing for spillover effects through to \$1.30, however, implies large positive employment effects, as employment below \$1.30 grows by 16.8% between 1966 and 1967. Although it is not possible to obtain a robust employment elasticity in that particular sector, the key fact is that employment in laundries in the South at and up to 1.3 times the minimum wage grew a lot between 1966 and 1967. This drove an overall expansion in that sector: total employment grew +11.5%, which can be decomposed into +16.8% below \$1.30 and +3.0% above.

Generalized estimates. We implement the bunching approach for all the industries for which we have information both in 1966 and 1967 in the BLS industry wage reports, i.e., hotels, restaurants, and laundries (see figure 6b). We include all regions (not only the South). The estimating sample accounts for 20% of the workforce of the treated industries. For restaurants and hotels, we restrict our sample to non-tipped workers, as we are interested in capturing the effects of the minimum wage increase at \$1.³³

In our benchmark estimate, we find a small positive employment elasticity of the reform. As shown by table 7, total employment grew by 2.2% in our sample of treated industries between 1966 and 1967, very close to the growth rate observed in the other sectors of the economy (2.0%). Table 7 shows that low-wage jobs (those paying less than 1.15 times the minimum wage) also grew by 2.2% between 1966 and 1967. Employment above \$1.70 (roughly the top 30% of the distribution) grew slightly more slowly, by 0.8%, implying a positive employment elasticity of 0.16; see Table 7. This result is consistent with the estimate we obtain using a cross-state design in the CPS (see Section 5.2 below). Our result of a small employment elasticity overall is also robust to varying assumptions on the spillover effects of the minimum wage. As reported in Table 7, considering spillover effects up to 120% of the minimum wage (instead of 115%) leads to a small negative employment elasticity (-0.28). Assuming there are no spillover effects, we obtain a zero effect elasticity (-0.03). In other words, it is not the case that there is a missing mass of workers at just the level of the

³³The tipped minimum wage is introduced at \$0.50 in 1967 in hotels and restaurants, i.e. 50% of the value of the minimum wage. There is clear evidence of bunching at 50 cents for tipped minimum wage workers in 1967, see appendix figures A24 and A26.

minimum wage offset by an excess mass just above. This finding suggests that labor-labor substitution (e.g., substitution of \$1 workers by slightly higher skilled individuals) is not driving our estimates of small employment elasticities.³⁴

One potential concern with our approach is that there may be complementarity between low-wage workers and workers at the top of the distribution (whom we use to compute counterfactual employment growth rates at the bottom). For example, the reform may have had negative employment effects of low-skill individuals and led employers to fire some of their supervisors. To address this concern, we assess whether overall employment in the treated industries increased or declined compared to overall employment in the control industries, using CPS data at the industry \times year level. Figure A33a shows that prior to the reform, treated vs. control industries were on similar trends, and that in 1967 and 1968 they continue to grow at the same rate. From 1969 onwards, treated industries start growing slightly faster than control industries. We obtain similar results in the BLS industry wage reports data for the sub-sample of BLS industries for which we can track total employment over time. These results suggest that our bunching design is unlikely to underestimate the dis-employment effects of the reform.

5.2 Employment Effects in the CPS

We supplement the bunching analysis with an investigation of the employment effects of the reform in the CPS. We use the same cross-state design as implemented for wages in section 4.3 above: we compare employment outcomes in states that had no minimum wage law as of January 1967 (strongly treated) vs. states that did (weakly treated). We provide graphical evidence that employment outcomes evolve in parallel in strongly vs. weakly treated states before the reform.

Intensive margin. Starting with the effect of the reform on the annual number of hours worked, we estimate a difference-in-differences model similar to the one of section 4.3, except that the outcome is log annual hours.³⁵ Figure 11a shows that before 1967 annual hours

³⁴We only have suggestive evidence that there is no important skilled-based labor-labor substitution. Ideally, if we had information on the demographic characteristics of the workers (in particular about their age and level of education) in the BLS industry wage reports, we could divide our sample by age and education levels groups. Following Cengiz et al. (2018), we could plot each groups' missing mass below the new minimum wage and the excess number of jobs at the minimum wage. If these estimates were aligned on the 45 degree line, we could conclude that there is no evidence for systematic labor-labor substitution based on skills and experience.

³⁵Annual hours are constructed as the ratio between annual wage (directly measured in the CPS) and the (re-constructed) hourly wage.

evolved similarly in the strongly vs. weakly treated states. There is no detectable change following the reform, neither for white nor for black workers; see table 8. We can rule out a decline in average hours worked of more than 3.8% over the 1967-1971 period (3.6% for black workers).³⁶

Extensive margin. Next, we investigate the impact of the reform on the probability of being employed. We define non-employment as being unemployed or out of the labor force. This allows us to capture potential effects of the reform on labor force participation (in particular for women). As shown by table 9, the reform does not appear to affect the probability of being employed, with a point estimate for the difference-in-differences coefficient of interest of 0.001. The effect is precisely estimated. We are able to rule out a reduction in employment probability of more than 0.3 percentage points. Because average wages in the strongly treated states grew by 3% above and beyond wage growth in the weakly treated states, the lower bound employment elasticity is -0.1. As shown by Figure 12, this estimate is in the range of elasticities found in the minimum wage literature.

Heterogeneity by race. We estimate the model for black and white individuals separately. The results show no significant dis-employment effects for either group. As reported on Table 9 we can rule out a reduction in the probability of being employed for black persons of more than -1.8 percentage points. Since average wages increased 11.1% for black workers in strongly treated vs. weakly treated states, the lower bound employment elasticity is -0.18 for black persons in this setting—still in the range of the elasticities found in the literature (12). Because the 1967 reform had large positive effects of wages but small employment effects (with lower bounds only slightly negative), it appears to have been effective at reducing not only the racial earnings gap (i.e., the difference in earnings between employed individuals) but also the racial income gap (i.e., including non-workers).

6 Effects of the 1967 Reform on Racial Earnings Gaps

This Section quantifies the contribution of the 1967 minimum wage extension to the decline in racial earnings inequality observed in the late 1960s and early 1970s.

³⁶The number of hours worked in the strongly treated states declined over 1973-1980, but the estimates are not statistically different from zero.

6.1 Unadjusted Racial Gap

We start by investigating how the reform affected the economy-wide unadjusted racial gap. To simplify the analysis, we only include the industries covered in 1938 and in 1967, i.e., we disregard the industries covered in 1961, 1974, and 1986. The two sets of industries we consider include about 75 % of all workers in 1966. Recall that the unadjusted racial earnings gap (in the 1938 and 1967 industries combined) fell by 25 log points between 1965 and 1980 (Figure 1a). The economy-wide racial gap can be expressed as a function of the racial gap in the 1938 industries (G^c), the racial gap in the 1967 industries (G^t), the average log earnings difference between black workers in the control vs. treated industries G_b^{ct} , and the shares of black and white workers in the treatment and control industries:

$$G^{\text{total}} = s_w^c G^c + s_w^t G^t + G_b^{ct} (s_w^c - s_b^c) \quad (4)$$

with s_w^c (respectively s_b^c) the share of white (resp. black) workers working in the control industries; s_w^t (respectively s_b^t) the share of white (resp. black) workers working in the treated ones; $s_w^c + s_w^t = s_b^c + s_b^t = 1$. By 1980, we have $s_w^c = 64\%$; $s_w^t = 36\%$; and, $s_b^c = 56\%$; $s_b^t = 44\%$. ³⁷

Using this decomposition, we estimate how the unadjusted racial earnings gap would have evolved if the minimum wage had not been extended in 1967. Our counterfactual scenario relies on two assumptions: first, that absent the reform the racial earnings gap in the treatment group G^t would have evolved as in the control group (as was the case before the reform); second, that the control-treatment earnings gap for black workers G_b^{ct} would have evolved as for white workers (as was the case before the reform). We calculate counterfactual G^t (resp. G_b^{ct}) by averaging the difference in the pre-trends of the racial earnings gap (resp. control-treatment gaps) between 1961 and 1966, and adding this constant to the racial earnings gap in the control group (resp. control-treatment gap for whites) for each year after 1966. Specifically, we compute $G_{k,\text{counterfactual}}^t$ as:

$$\begin{cases} \forall k \leq 1966 : G_{k,\text{counterfactual}}^t = G_{k,\text{observed}}^t \\ \forall k > 1966 : G_{k,\text{counterfactual}}^t = G_{k,\text{observed}}^c - \frac{1}{N} \sum_{k=1961}^{1966} (G_{k,\text{observed}}^c - G_{k,\text{observed}}^t) \end{cases} \quad (5)$$

As shown by figure 13, the 1967 minimum wage extension can explain around 20% of the decline in the racial earnings gap by 1980. The unadjusted racial earnings gap would have been 31 log points instead of 25 log points by 1980. 82% of this 6 log points difference

³⁷see appendix C for a derivation of the decomposition.

owes itself to a reduction in the racial earnings gap within the treated industries (i.e., within-industry convergence). The remaining 18% owes itself to a reduction in the control-treatment earnings gap for black workers (i.e., between-industry convergence). The contribution of the minimum wage to the decline in the unadjusted racial earnings gap (20%) is comparable in size to the improvements in schooling quality found by [Card and Krueger \(1992\)](#).³⁸

6.2 Adjusted Racial Gaps

Next, we investigate the role of the 1967 reform in the evolution of the adjusted racial gap (i.e., controlling for observables). We estimate the following equation for workers in the treated and control sectors separately:

$$\log w_{ijt} = \alpha + \gamma \text{Black}_i + \sum_k \beta_k \text{Black}_i \times \delta_{t+k} + \mathbb{X}'_{ijt} \Gamma + \nu_j + \delta_k + \varepsilon_{ist} \quad (6)$$

Where Black_i is a dummy for being a black worker; the set of individual level controls \mathbb{X}'_{ijt} is the same as in the wage regression (gender, number of years of schooling, experience, industry, full-time or part-time status, occupation and marital status).

Figure 14a uses this equation to show the evolution of the average wage of black and white workers in the treated and control industries. Conditional on observable characteristics, black workers in the treated industries were paid about 12% less than black workers in the control industries before the reform. The wages of these two groups of workers evolved in parallel. In 1967, the wage gap between black workers in control vs. treated industries fell dramatically, to less than 5% in the years after the reform. Strikingly, within the treated industries the earnings of black workers entirely caught up with those of white workers. Average earnings (for both white and black workers) remained lower in the treated industries than in the control industries post-reform.

We plot the corresponding adjusted racial gaps (i.e. $\gamma + \beta_k$, k in [1961,1980]) for the control and treated industries in figure 14b. Before the reform, and conditional on observable characteristics, white workers were paid 20%–25% more than black workers. This is true in both the treated and control industries. The adjusted racial earnings gap also evolved

³⁸There are some differences, however, between our calculations and [Card and Krueger \(1992\)](#)'s calculations that make a precise comparison not straightforward. In particular, [Card and Krueger \(1992\)](#) calculate the contribution of relative improvements in schooling quality to the decline of the unadjusted racial wage gap measured as the mean log *weekly* (vs. annual in our calculation) wage difference between white and black workers *aged 21-60* (vs. 25-55 in our calculations), for the whole economy (vs. our treatment and control industries combined), and from 1960 to 1980 as measured in the U.S. Censuses (vs. from 1965 to 1980 measured in the CPS).

in parallel before the reform. Starting in 1967, the adjusted racial earnings gap declined in both the treated and control industries. However, it fell much more in the treated ones. By the mid-1970 the adjusted racial gap vanished in the control industries (see light blue lines in figure 14a), while a 10% difference in wages between similar black and white workers in the control industries remained. One interpretation of the positive racial earnings gap in the control industries (despite the presence of a high minimum wage) is that the gap is driven by wage differences conditional on observables among medium or high-skill workers. By contrast, because the industries in the treatment group are low-wage, the adjusted racial earnings gap may be close to zero if a large fraction of the workers are paid around the minimum wage.

Last, we decompose the adjusted racial earnings gap for high-skill workers (12 years of schooling or more) vs. low-skill workers (11 years of schooling or less) in the treated and the control industries. Within the treated industries (figure 14a), the decline in the adjusted racial gap is concentrated among low-skilled workers. By contrast, there is no change in trend for high-skill workers. Within the control industries (figure 14a), the decline in the adjusted racial earnings gap is smooth for both high and low-skill workers. These results further suggest that the extension of the minimum wage (and not some other confounding shock) is the true driving force behind the decline in the adjusted racial earnings gap in the treated industries.

6.3 Discussion

How can we explain the large wage and small dis-employment effects of the minimum wage we obtain? One hypothesis is that before the reform, whites colluded to pay black workers low wages in at least some of the treated industries and some regions (for example, laundries in the South). In the standard Becker (1957) model, taste-based discrimination is competed away if there are enough non-discriminating employers. However, in the context of agriculture, laundries, nursing homes, and other treated industries pre-1967, it is possible that there was no such competition but instead collective discrimination. Studying textile manufacturing in South Carolina in the mid-1960s, Heckman and Payner (1989) document a significant increase in the employment share of black workers following the introduction of federal anti-discrimination policy. They note that from 1915 to 1965, black workers had been excluded from the main operative and craftsman occupations of manufacturing in South Carolina by Jim Crow laws. There was white collusion to exclude black workers from employment. Our hypothesis is that a similar mechanism was at play in the treated industries, but affecting

wages rather than quantities of labor employed as in Heckman and Payner (1989). This hypothesis potentially explains why wages rose sharply in 1967, but employment did not fall.

7 Conclusion

This paper studies the causal effect of the 1967 extension of the U.S. federal minimum wage—a large natural quasi-experiment—on wages, employment, and the dynamics of racial inequality in the United States. We uncover the critical role of the minimum wage in the reduction of the racial earnings gap during the Civil Rights Era. The 1966 Fair Labor Standards Act extended minimum wage coverage to sectors that employed 20% of the U.S. workforce. Drawing on a variety of data sources—including newly digitized BLS industry wage reports—and research designs, we show that the 1967 reform dramatically increased wages in the newly covered industries. The reform contributed to reducing the economy-wide racial gap in two ways: first by reducing the wage gap between the treated industries (where black workers were over-represented) and the rest of the economy; second, by reducing the racial earnings gap within the treated industries, as the wages of black workers increased faster than those of white workers. We can rule out large dis-employment effects, including among black workers. Overall, the 1967 extension of the minimum wage can explain more than 20% of the decline in the racial gap observed during the late 1960s and 1970s—the only period of time after World War II during which the black-white earnings gap fell significantly. Our paper provides the first causal evidence on how minimum wage policy affects racial income disparities and sheds new light on the dynamics of labor market inequality in the United States.

While our paper focuses on the effect of the 1967 extension of the minimum wage to new sectors of the economy, it is likely that the minimum wage affected racial inequality more broadly. The late 1960s were a time when the federal minimum wage reached its historical peak in real terms, following a series of hikes in 1961, 1963, 1967, and 1968. To the extent that black workers were over-represented at or just below the minimum wage, these increases may have contributed to reducing the racial earnings gap above and beyond the 1967 reform. In future research, we plan to investigate how the decline in the federal minimum wage starting in the 1970s may have contributed to the stagnation of racial earnings convergence over the last several decades. Another fruitful venue for future work involves studying the consequences of recent local state minimum wages increases on gender and racial earnings gaps today.

References

- Alberto Abadie, Susan Athey, Guido W. Imbens, and Jeffrey Wooldridge. When should you adjust standard errors for clustering? *Working Paper*, 2017.
- John M. Abowd, Francis Kramarz, Thomas Lemieux, and David N. Margolis. Minimum wages and youth employment in france and the united states. In David G. Blanchflower and Richard B. Freeman, editors, *Youth Employment and Joblessness in Advanced Countries*. The University of Chicago Press, 2000.
- Sylvia Allegretto, Arindrajit Dube, Michael Reich, and Ben Zipperer. Credible research designs for minimum wage studies. *ILR Review*, 70(3):559–592, 2017.
- Abhay Aneja and Carlos Avenancio-Leon. The labor market effects of minority political power: Evidence from the voting rights act of 1965. *Working Paper*, 2018.
- Orley Ashenfelter. Changes in labor market discrimination over time. *The Journal of Human Resources*, 5(4):403–430, 1970. URL <http://www.jstor.org/stable/144999>.
- Orley Ashenfelter and James Heckman. Measuring the effect of an antidiscrmination program. In Orley Ashenfelter and James Blum, editors, *Evaluating the Labor Market Effects of Social Programs*. Princeton University, Industrial Relations Section, Princeton, 1976.
- Orley Ashenfelter and Robert S. Smith. Compliance with the minimum wage law. *Journal of Political Economy*, 87(2), 1979.
- David H. Autor, Alan Manning, and Christopher L. Smith. The contribution of the minimum wage to us inequality over three decades: A reassessment. *American Economic Journal: Applied Economics*, 8(1):58–99, 2016.
- Martha J. Bailey, John Di Nardo, and Bryan A. Stuart. The economic impact of a very high national minimum wage: Evidence from the 1966 amendments to the fair labor standards act. *Working Paper*, 2018.
- Patrick Bayer and Kerwin K. Charles. Divergent paths: Structural change, economic rank, and the evolution of Black-White earnings differences, 1940-2014. *Quarterly Journal of Economics*, 133(3):1459–1501, 2018.
- Gary S. Becker. *The Economics of Discrimination*. The University of Chicago Press, 1957.

Marianne Bertrand, Esther Duflo, and Sendhil Mullainathan. How much should we trust difference in differences estimates? *Quarterly Journal of Economics*, 2004.

McKinley L. Blackburn, David E. Bloom, and Richard B. Freeman. The declining economic position of less-skilled american males. In Gary Burtless, editor, *A Future of lousy jobs?*, Washington D.C., 1990. The Brookings Institution.

Charles Brown. The federal attack on labor market discrimination: the mouse that roared? In R. Ehrenberg, editor, *Research in Labor Economics*, volume 5, pages 33–68. JAI Press, New York, 1982.

Charles Brown. Black-white earnings ratios since the civil rights act of 1964: The importance of labor market dropouts. *Quarterly Journal of Economics*, 99(1):33–44, 1984.

George Burman. The economics of discrimination: The imat of public policy. Ph.D. dissertation, 1973.

R. Butler and James J. Heckman. The impact of the government on the labor market status of black americans: A criti- cal review. In L. Hausman, editor, *Equal Rights and Industrial Relations*. Industrial Relations Research Association, Madison, Wisconsin, 1977.

A. Colin Cameron, Jonah B. Gelber, and Douglas L. Miller. Bootstrap-based improvements for inference with clustered errors. *The Review of Economics and Statistics*, 2008.

David Card. Using regional variation in wages to measure the effects of the federal minimum wage. *ILR Review*, 46(1):22–37, 1992.

David Card and John E. DiNardo. Skill-biased technological change and rising wage inequality: Some problems and puzzles. *Journal of Labor Economics*, 20(4):733–783, 2002.

David Card and Alan B. Krueger. School quality and black-white relative earnings: A direct assessment. *The Quarterly Journal of Economics*, 107(1):151–200, 1992.

David Card and Alan B. Krueger. Trends in relative black-white earnings revisited. *American Economic Review Papers & Proceedings*, 83(2):85–91, 1993.

David Card and Alan B. Krueger. *Myth and measurement: the new economics of the minimum wage*. Princeton University Press, New Jersey, 1995.

David Card, Lawrence F. Katz, and Alan B. Krueger. An evaluation if recent evidence on the employment effects of minimum and subminimum wages. *National Bureau of Economic Research (NBER) Working Paper 4528*, 1993.

Doruk Cengiz, Arindrajit Dube, Attila Lindner, and Ben Zipperer. The effect of minimum wages on low-wage jobs: Evidence from the United States using a bunching estimator. *CEP Working Paper DP1531*, 1531, 2018.

Amitabh Chandra. Is the convergence of the racial wage gap illusory? *NBER Working Paper No. 9476*, 2003.

Kenneth Y. Chay. The impact of federal civil rights policy on black economic progress: Evidence from the equal employment opportunity act of 1972. *ILR Review*, 51(4):608–632, 1998.

Raj Chetty, Nathaniel Hendren, Maggie R. Jones, and Sonya R. Porter. Race and economic opportunity in the united states: An intergenerational perspective. *Working Paper*, 2018.

congressional budget office. The effects of a minimum wage increase on employment and family income. Technical report, Congress of the United States, Washington D.C., 2014.

Carroll R. Daugherty. The economic coverage of the fair labor standards act: A statistical study. *Law and Contemporary Problems*, 6(3):406–415, 1939.

Richard Dickens, Stepehn Machin, and Alan Manning. Estimating the effect of minimum wages on employment from the distribution of wages: A critical view. *Labour Economics*, 5 (2):109–134, 1998.

John E. DiNardo, Nicole M. Fortin, and Thomas Lemieux. Labor market institutions and the distribution of wages, 1873-1992: A semiparametric approach. *Econometrica*, 64(5), 1996.

John J. Donohue and James Heckman. Continuous versus episodic change: The impact of Civil Rights policy on the economic status of Blacks. *Journal of Economic Literature*, 29(4): 1603–1643, 1991.

Arindrajit Dube. Minimum wages and the distribution of family incomes. *IZA Discussion Paper 10572*, 2017.

Arindrajit Dube, William T. Lester, and Michael Reich. Minimum wage effects across state borders: estimates using contiguous counties. *The Review of Economics and Statistics*, 92(4): 945–964, 2010.

Arindrajit Dube, Luara Giuliano, and Jonathan Leonard. Fairness and frictions: Impact of unequal raises on quit behavior. *American Economic Review*, 2018a.

Arindrajit Dube, Alan Manning, and Suresh Naidu. Monopsony and employer misoptimization explain round number bunching in the wage distribution. *Working Paper*, 2018b.

Greg J. Duncan and Saul D. Hoffman. A new look at the causes of the improved economic status of black workers. *Journal of Human Resources*, 18(2):268–282, 1983.

Niklas Engbom and Christian Moser. Earnings inequality and the minimum wage. *Working Paper*, 2018.

Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, and J. Robert Warren. Integrated public use microdata series, current population survey: Version 6.0 [dataset], 2018. URL <https://doi.org/10.18128/D030.V6.0>.

Richard B. Freeman. Decline of labor market discrimination and economic analysis. *The American Economic Review*, 63(2):280–286, 1973. URL <http://www.jstor.org/stable/1817087>.

Richard B. Freeman. Black economic progress after 1964: Who has gained and why? In Sherwin Rosen, editor, *Studies in Labor Markets*, chapter 8, pages 247 – 294. National Bureau of Economic Research, 1981.

Richard B. Freeman, R. A. Gordon, Duran Bell, and Robert E. Hall. Changes in the labor market for black americans, 1948-72. *Brookings Papers on Economic Activity*, 1973(1):67–131, 1973. URL <http://www.jstor.org/stable/2534085>.

Milton Friedman. *Capitalism and Freedom*. Chicago University Press, Chicago, 1962.

Morris Goldstein and Robert S. Smith. The estimated impact of the anti-discrimination program aimed at the federal contractors. *Industrial and Labor Review*, 29(4):524–64, 1976.

Edward M. Gramlich. Impact of minimum wages on other wages, employment and family incomes. *Brookings Papers on Economic Activity*, 2:409–461, 1976.

Meyer Robert H. and David A. Wise. The effects of the minimum wage on the employment and earnings of the youth. *Journal of Labor Economics*, 1(1):66–100, 1983.

Péter Harasztosi and Attila Lindner. Who pays for the minimum wage? *American Economic Review*, Forthcoming.

Joan Gustafson Haworth, James Gwartney, and Charles Haworth. Earnings, productivity, and changes in employment discrimination during the 1960's. *The American Economic Review*, 65(1):158–168, 1975. URL <http://www.jstor.org/stable/1806404>.

James Heckman and Kenneth I. Wolpin. Does the contract compliance program work? an analysis of chicago data. *Industrial Labor Relations Review*, 29(4):544–64, 1976.

James J. Heckman. Simultaneous equation models with continuous and discrete endogenous variables and structural shifts. In S.M. Goldfeld and R.E. Quandt, editors, *Studies in Non-Linear Estimation*, pages 235–272. Ballinger, Cambridge, 1976.

James J. Heckman and Brook S. Payner. Determining the impact of federal antidiscrimination policy on the economic status of blacks: A study of south carolina. *The American Economic Review*, 79(1):138–177, 1989.

James J. Heckman, Thomas M. Lyons, and Petra E. Todd. Understanding black-white wage differentials, 1960-1990. *The American Economic Review*, 90(2):344–349, 2000.

Hilary Hoynes and Diane Whitmore Schanzenbach. Consumption responses to in-kind transfers: Evidence from the introduction of the food stamp program. *American Economic Journal: Applied Economics*, 1(4), 2009.

Ekaterina Jardim, Mark C. Long, Robert Plotnick, Emma van Inwegen, Jacob Vigdor, and Hilary Wething. Minimum wage increases, wages, and low-wage employment: Evidence from seattle. *National Bureau of Economic Research (NBER) Working Paper* 23532, 2018.

Lyndon B. Johnson. Remarks at the signing of the fair labor standards amendments of 1966, September 23 1966.

Ira Katznelson. *When Affirmative Action was White. An Untold History of Racial Inequality in Twentieth-Century America*. W.W. Norton & Company, 2006.

Henrik Kleven. Bunching. *Annual Review of Economics*, 8:435–464, 2016.

William M. Landes. The economics of fair employment laws. *Journal of Political Economy*, 76: 507–552, 1968.

David Lee. Wage inequality in the united states during the 1980s: Rising dispersion of falling minimum wage? *Quarterly Journal of Economics*, 114(3):977–1023, 1999.

Lee Lillard, James Smith, and Finis Welch. What do we really know about wages? the importance of nonreporting and census imputation. *Journal of Political Economy*, 94(3):489–506, 1986. URL <https://EconPapers.repec.org/RePEc:ucp:jpolec:v:94:y:1986:i:3:p:489-506>.

Glenn C. Loury. Black economic progress: The reality and the illusion. *The Review of Black Political Economy*, 10(4):355–379, 1980.

Robert A. Margo. Obama, Katrina, and the persistence of racial inequality. *The Journal of Economic History*, 76(2):301–341, 2016.

Suzanne B. Mettler. Federalism, gender and the fair labor standards act of 1938. *Polity*, 26(4): 635–654, 1994.

David Neumark and William L. Washer. Employment effects of mininimum and subminimum wages: panel data on state minimum wage laws. *ILR Review*, 46(1):55–81, 1992.

David Neumark and William L. Washer. *Minimum Wages*. MIT Press, Cambridge, MA, 2008.

David Neumark, J.M. Ian Salas, and William L. Washer. Revisiting the minimum wage employment debate: Throwing out the baby with bathwater? *ILR Review*, 2014.

U.S. Department of Health & Human Services. Indicators of welfare dependence: Aid to families with dependent children (afdc) and temporary assistance for needy families (tanf). Technical report, Annual report to Congress, 2001.

Donald Osborne. Negro employment in the textile industries of north and south carolina. Technical report, Equal Employment Opportunity Commission, Research Report, 1966.

O.W. Phelps. *The Legislative Background of the Fair Labor Standards Act*. Chicago, 1939.

Thomas Piketty, Emmanuel Saez, and Gabriel Zucman. Distributional national accounts: Methods and estimates for the united states. *Quarterly Journal of Economics*, 2(133):553–609, 2018.

Steven Raphael and Michael A. Stoll. *Why are So Many Americans in Prison?* Russel Sage Foundation, New York, NY, 2013.

Richard Rothstein. *THe Color of Law: A Forgotten History of How Our Government Segregated America.* Liveright, 2017.

Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. Ipums usa: Version 8.0 [dataset], 2018. URL <https://doi.org/10.18128/D010.V8.0>.

Emmanuel Saez. Do taxpayers bunch at kink points? *American Economic Journal: Economic Policy*, 2(3):180–212, 2010.

James P. Smith and Finis R. Welch. Black-white male wage ratios: 1960-70. *The American Economic Review*, 67(3):323–338, 1977. URL <http://www.jstor.org/stable/1831403>.

James P. Smith and Finis R. Welch. Closing the gap. Technical report, Rand Corporation, Santa Monica, CA, 1986.

James P. Smith and Finis R. Welch. Black economic progress after myrdal. *Journal of Economic Literature*, 27(2):519–564, 1989. URL <http://www.jstor.org/stable/2726688>.

James Tobin. On improving the economic status of the negro. *Daedalus*, 94(4):878–98, 1965.

Wayne Vroman. Changes in black worker's relative earnings: Evidence for the 1960's. In G.M. Furstenberg et al., editor, *Patterns of Racial Discrimination*, volume 11, chapter 11. Heath-Lexington, Lexington, Mass., 1974.

Phyllis A. Wallace. A decade of policy development in equal opportunities in employment and housing. *MIT Working Paper 767-75*, 1975.

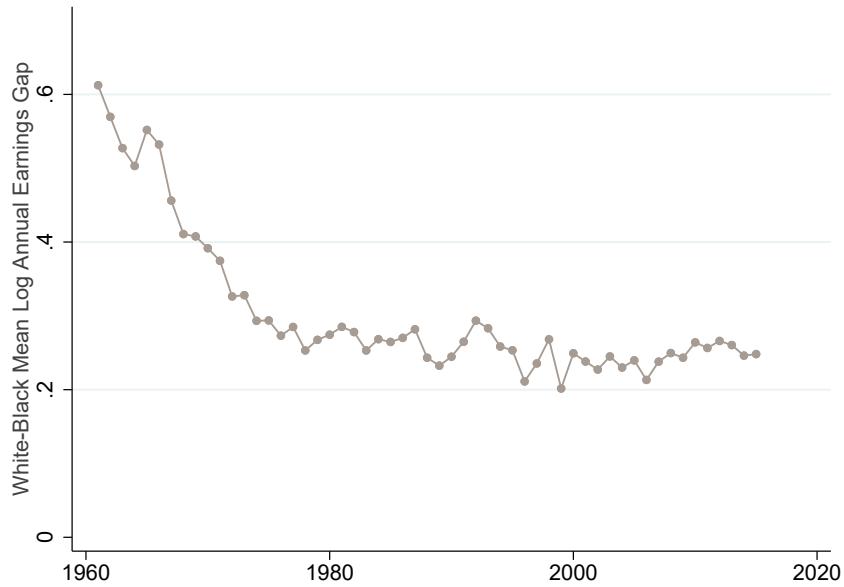
Finis Welch. Black-white differences in returns to schooling. *The American Economic Review*, 63(5):893–907, 1973. URL <http://www.jstor.org/stable/1813912>.

William Wilson. *The Truly Disadvantaged: Inner City, the Under Class and Public Policy*. University of Chicago Press, Chicago, 1980.

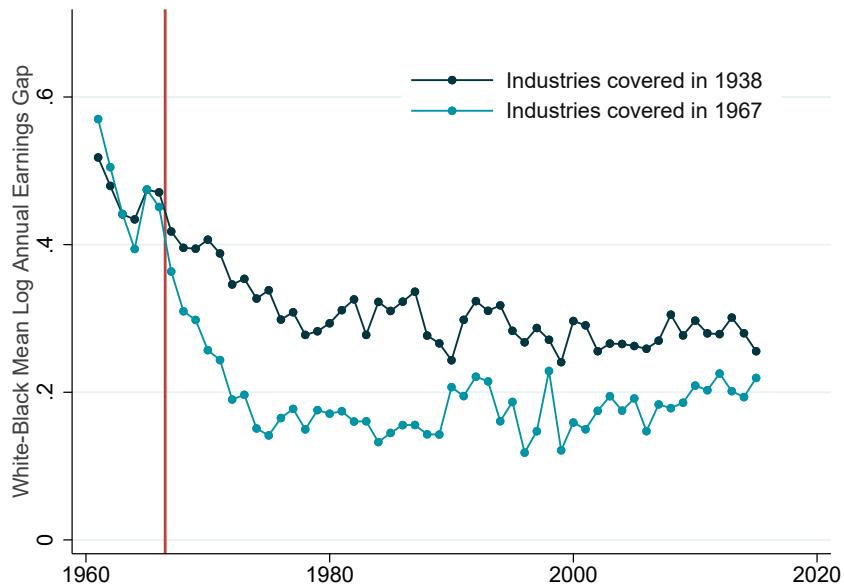
Gavin Wright. The regional economic impact of the civil rights act of 1964. *Boston University Law Review*, 95:759, 2015.

Figure 1: White-black unadjusted wage gap in the long-run

(a) Economy-wide



(b) By type of industry

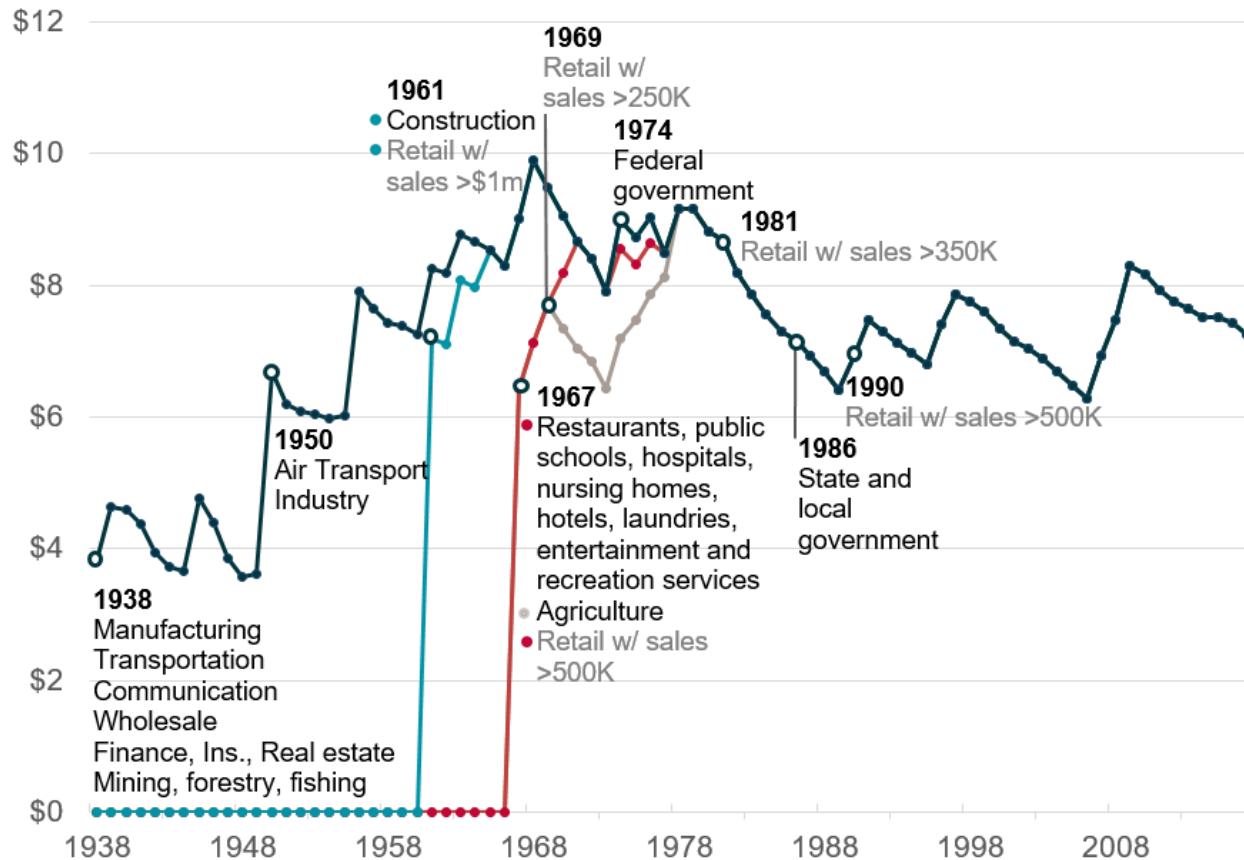


Source: Annual Social and Economic Supplement of the Current Population Survey, 1962-2016.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: The racial gap is calculated as difference in the average log annual earnings of black workers and the average log annual earnings of white workers. There is no adjustment for any observables. The CPS collects information on earnings received during the previous calendar year. Therefore, our estimate of the racial gap in March 1962 is reported in 1961.

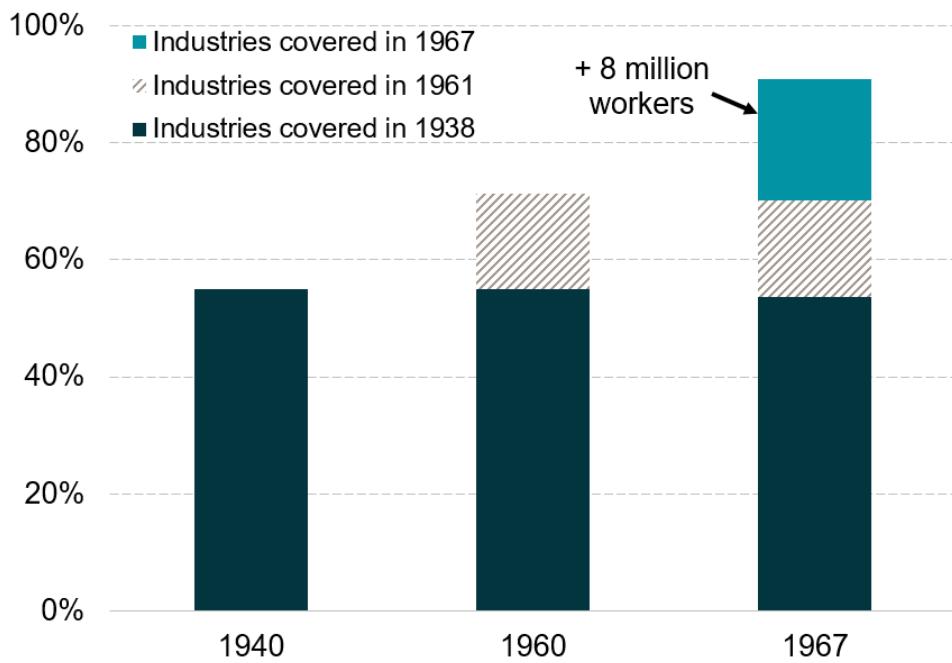
Figure 2: Expansions in minimum wage coverage, and real values of the minimum wage 1938-2017 (\$2017)



Source: For the breakdown by industry: see our analysis of the Fair Labor Standards Act in appendix A. For the values of the minimum wage, see Department of Labor, Wage and Hour Division, History of Federal Minimum Wage Rates Under the Fair Labor Standards Act, 1938-2009, available at: <https://www.dol.gov/whd/minwage/chart.htm>.

Notes: The 1938 Fair Labor Standards Act introduced the federal minimum wage in manufacturing, transportation, communication, wholesale trade, finance, insurance and real estate, mining forestry and fishing. In 1950, the federal minimum wage was expanded to the air transport industry in 1950. In 1961 the minimum wage coverage was extended to all employees of retail trade enterprises with sales over \$1 million, and to construction enterprises with sales over \$350,000. It is introduced at \$1 in nominal terms (\$7.18 in \$2017), which is only 87% of the federal minimum wage that year. It increases gradually over the following years. Minimum wages series deflated using CPI-U-RS (\$ 2017).

Figure 3: Share of workers covered by the minimum wage, 1940-1966

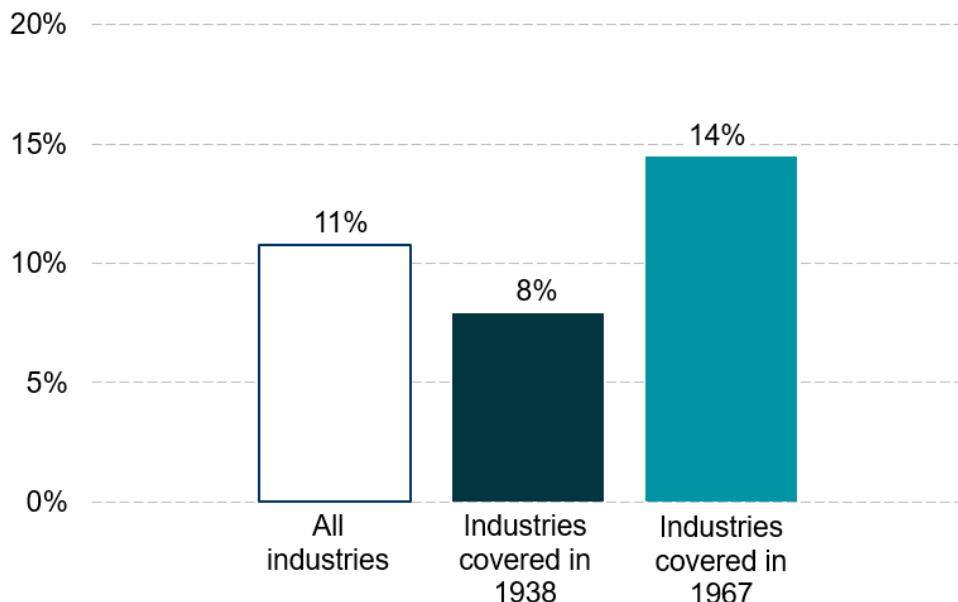


Sources: US Censuses 1940 and 1960. March CPS 1967.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces.

Notes: Coverage by federal minimum wage.

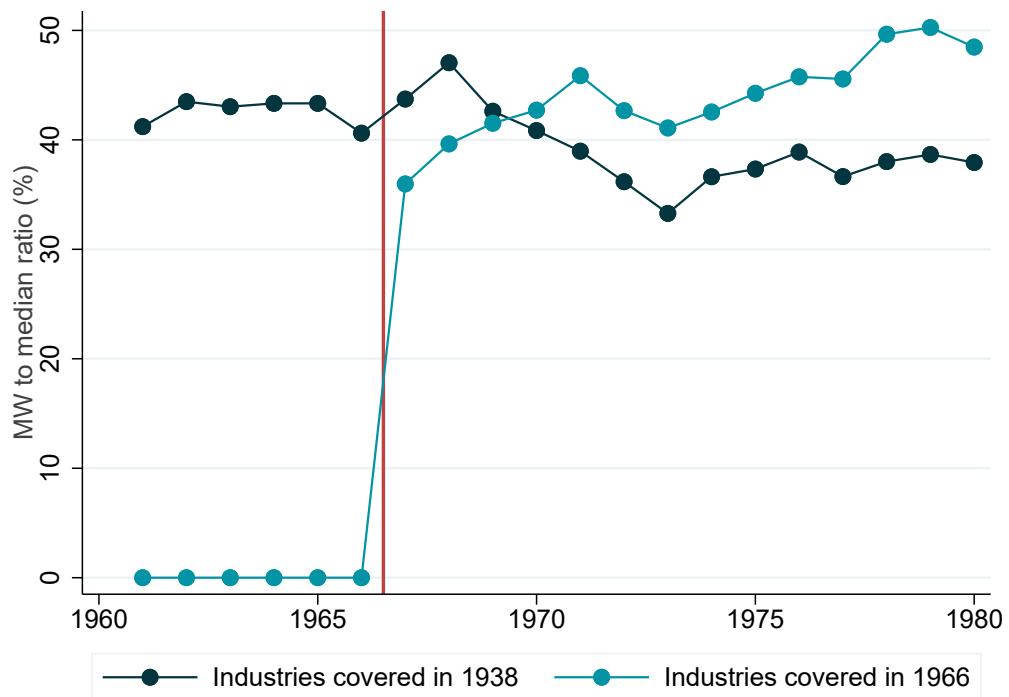
Figure 4: Black share of black and white workers in 1967



Source: March CPS 1967. Sample: Adults 25-55, black workers, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces.

Notes: Coverage by federal minimum wage.

Figure 5: Minimum wage to median ratio



Source: March CPS 1962-1981 for median wages.

Sample: Adults 25-55, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces.

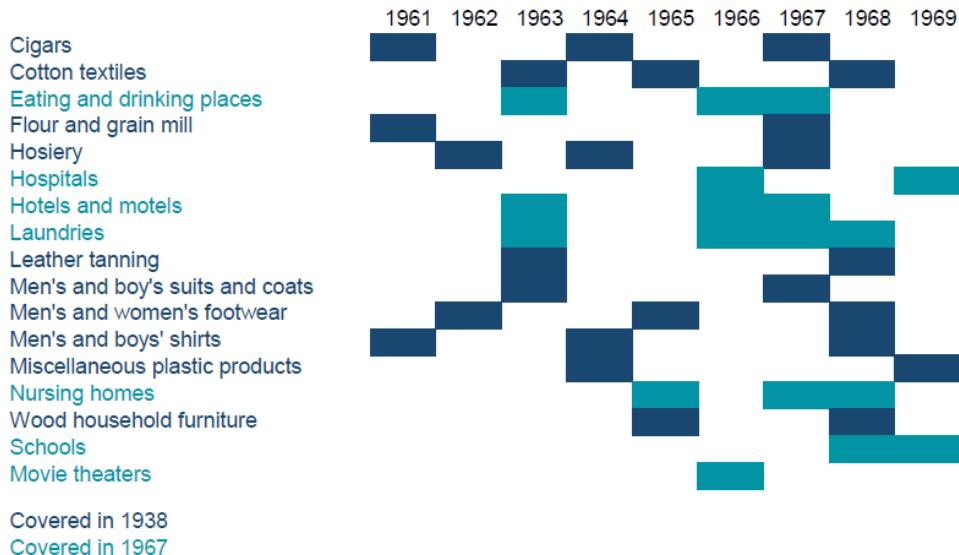
Notes: Minimum wage legislation at the federal level. Industries covered in 1966, except agriculture. Full-time (40 hours a week), full-year (52 weeks workers per year) MW to median ratio. The medians are calculated separately for the industries covered in 1938 and the industries covered in 1967.

Figure 6: BLS Industry Wage Reports

(a) What they look like – the example of laundries

Average hourly earnings ¹	United States						Northeast	
	April 1967			April 1968			April 1967	April 1968
	Total	Men	Women	Total	Men	Women		
Under \$1.00	0.3	0.4	0.2	0.1	0.3	0.1	0.2	0.2
\$1.00 and under \$1.05	14.9	6.0	17.5	.2	.3	.2	1.8	.1
\$1.05 and under \$1.10	2.0	.6	2.4	.1	.1	.1	.1	.1
\$1.10 and under \$1.15	4.1	1.6	4.8	.4	.3	.5	.8	.1
\$1.15 and under \$1.20	3.6	1.6	4.1	15.0	5.2	17.8	.9	2.1
\$1.20 and under \$1.25	2.4	1.2	2.7	2.9	1.1	3.4	.7	.7
\$1.25 and under \$1.30	7.2	5.1	7.8	7.2	4.3	8.0	4.2	1.9
\$1.30 and under \$1.35	3.1	1.4	3.6	3.1	1.2	3.6	1.5	1.0
\$1.35 and under \$1.40	4.2	1.9	4.8	3.2	1.5	3.6	2.6	1.1
\$1.40 and under \$1.45	7.1	4.0	7.9	5.6	2.9	6.4	9.2	5.4
\$1.45 and under \$1.50	4.2	2.3	4.8	2.6	1.5	2.9	4.7	2.5
\$1.50 and under \$1.55	9.2	8.7	9.4	5.8	4.6	6.2	18.3	4.5
\$1.55 and under \$1.60	3.6	2.8	3.8	2.4	1.3	2.8	7.1	2.6
\$1.60 and under \$1.65	4.2	4.3	4.2	10.5	8.5	11.1	6.2	21.7
\$1.65 and under \$1.70	2.6	2.6	2.5	6.4	4.3	7.0	5.1	8.0
\$1.70 and under \$1.75	2.3	2.9	2.1	3.4	3.3	3.4	2.8	5.1
\$1.75 and under \$1.80	3.2	4.8	2.8	4.3	4.0	4.4	4.0	5.2
\$1.80 and under \$1.85	2.0	2.6	1.8	2.2	2.6	2.1	2.6	3.0
\$1.85 and under \$1.90	2.0	2.9	1.7	2.4	3.0	2.2	2.5	3.2
\$1.90 and under \$1.95	1.4	2.5	1.0	1.6	2.4	1.4	1.7	2.3
\$1.95 and under \$2.00	1.1	1.7	.9	1.3	1.5	1.2	1.4	1.6
\$2.00 and under \$2.10	3.6	6.6	2.7	4.9	9.4	3.5	4.9	5.9
\$2.10 and under \$2.20	1.9	4.0	1.3	2.2	4.6	1.5	2.6	2.9
\$2.20 and under \$2.30	1.7	3.9	1.1	2.0	4.7	1.2	2.4	2.6
\$2.30 and under \$2.40	1.1	2.4	.7	1.4	2.8	1.0	1.5	1.9
\$2.40 and under \$2.50	.9	2.0	.5	.9	1.9	.6	1.4	1.4
\$2.50 and under \$2.60	1.7	4.6	.9	2.0	4.9	1.2	2.9	3.4
\$2.60 and under \$2.70	.8	2.1	.4	.8	1.9	.5	1.4	1.3
\$2.70 and under \$2.80	.7	1.9	.6	.7	2.0	.3	1.5	1.3
\$2.80 and under \$2.90	.5	1.7	.2	.5	1.3	.3	.9	1.0
\$2.90 and under \$3.00	.2	.6	.1	.5	1.3	.2	.4	.6
\$3.00 and over	2.4	8.3	.8	3.5	11.1	1.0	4.0	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers	440,779	99,165	541,614	441,931	99,702	342,229	107,063	109,859
Average hourly earnings ¹	\$1.55	\$1.91	\$1.44	\$1.67	\$2.04	\$1.56	\$1.77	\$1.88

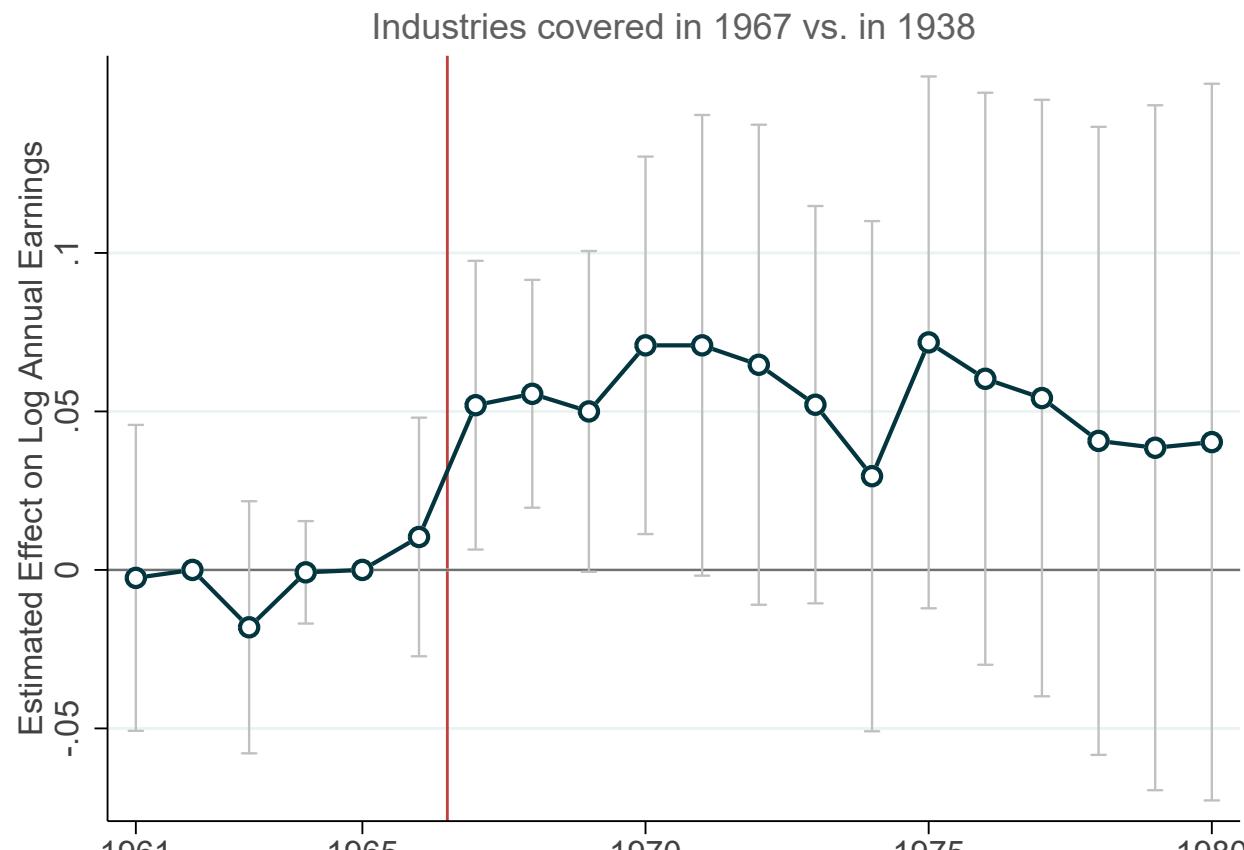
(b) Set of industries we digitized and years available



Source: Bureau of Labor Statistics Industry Wage Reports.

Notes: Panel (a) shows an example of hourly wage tabulations for laundries – a sector in which the minimum wage is introduced at \$1 in 1967. Those tabulations provide information on the hourly wage distribution by 5 cents or 10 cents bins. The number of workers in each bin can be easily computed using the information on the percent of workers in each bin, and the total number of workers at the bottom of the table. Panel (b) shows the set of industries we digitized: non-durable manufacturing (industries covered in 1938, in dark blue), industries covered in 1967, except agriculture (light blue). It also shows the years for which BLS industry wage reports were available.

Figure 7: Impact of the 1966 FLSA on annual earnings



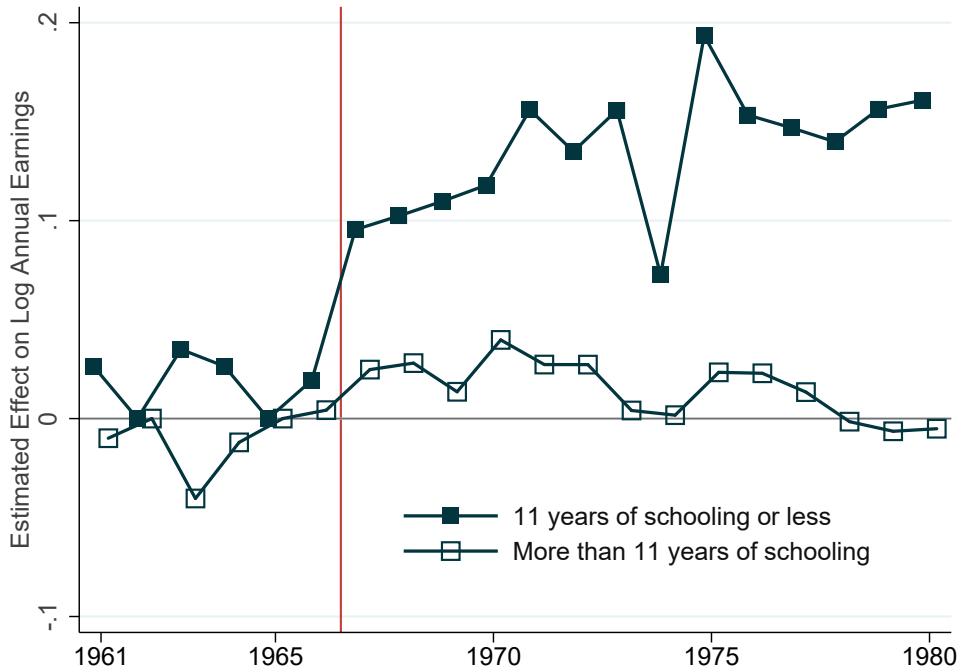
Source: March CPS 1962-1981.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

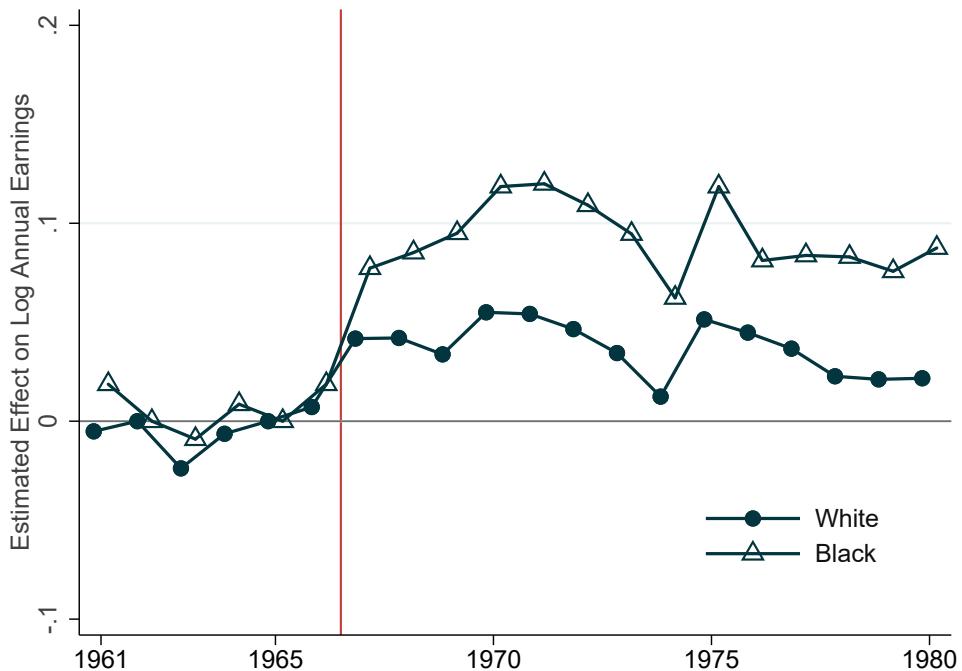
Notes: Since the variable annual earnings refer to the annual earnings earned the previous year, we start our graph in 1961. Standard errors clustered at the state (group) level. Includes industry and time fixed effects. Year 1962 is excluded and set to zero.

Figure 8: Heterogeneity of the wage effect of the 1966 FLSA

(a) By level of education



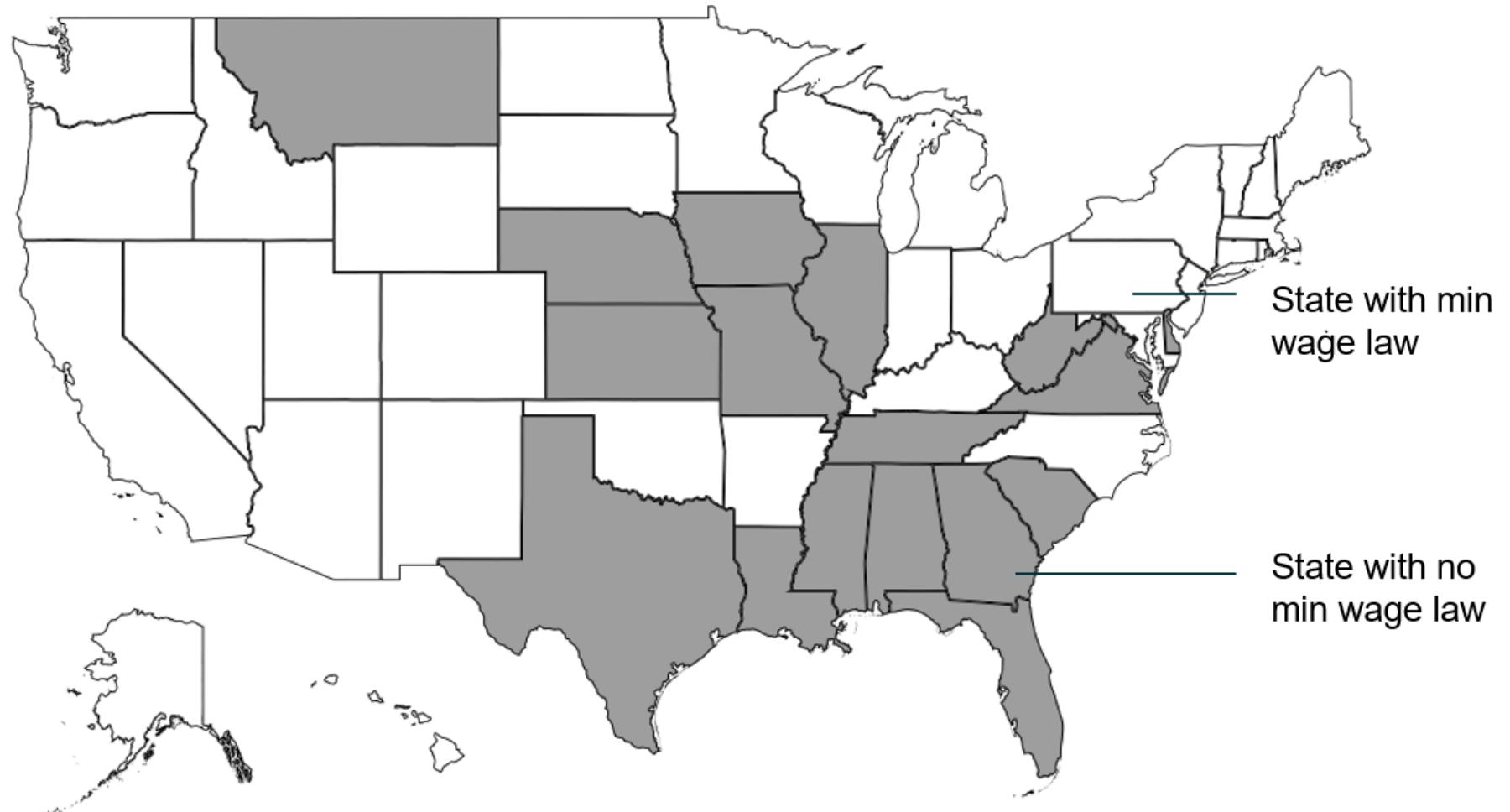
(b) By race



Source: March CPS 1962-1981. Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: Low-education: 11 years of schooling or less. High-education: more than 11 years of schooling.

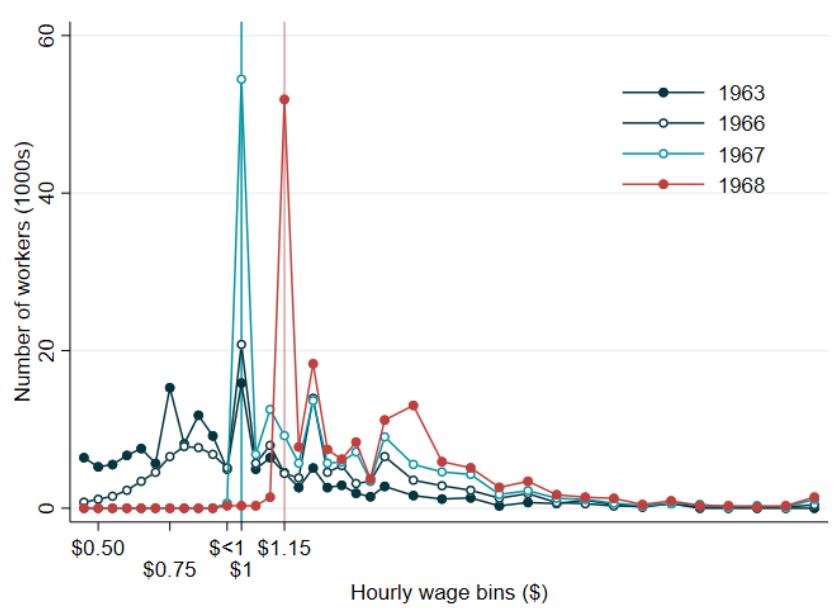
Figure 9: states with no minimum wage laws as of January 1966



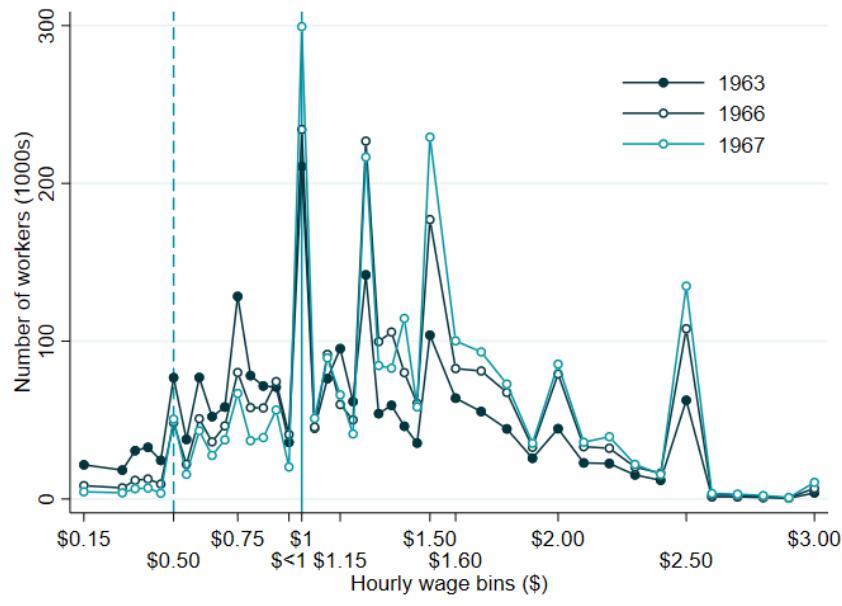
Source: Authors' minimum wage database 1950-2016. More details provided in appendix [A](#).

Figure 10: Earnings Distributions in the BLS Industry Wage Reports

(a) Laundries Earnings distribution in South



(b) Earnings distributions in hotels, restaurants and laundries – U.S.



Source: BLS Industry Wage Reports.

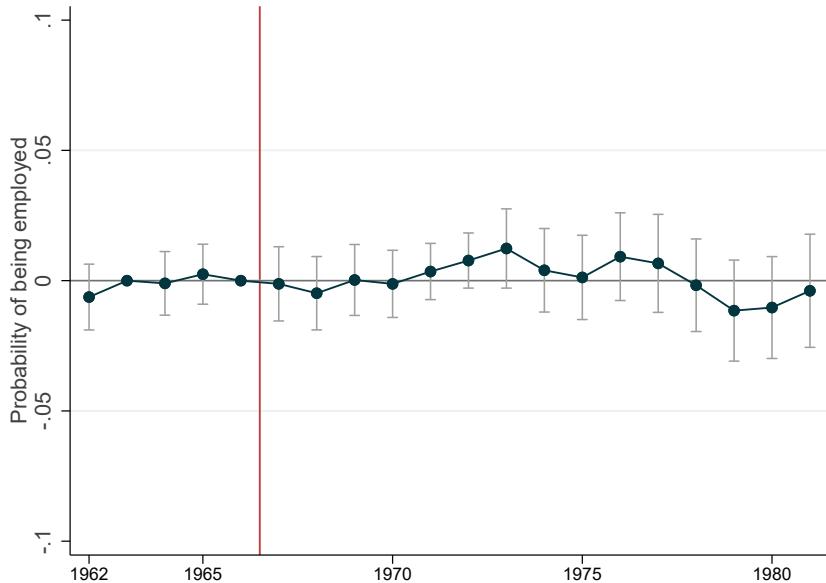
Sample: Panel (a): All nonsupervisory workers, except routemen; Panel (b) All nonsupervisory workers in restaurants, and in laundries (except routemen); all nonsupervisory employees in year-round hotels, motels and tourist courts. Notes: Panel (a) The minimum wage is introduced at \$1 in nominal terms in laundries in 1967. It is further increased to \$1.15 in 1968; Panel (b) The minimum wage is introduced at \$0.50 for tipped workers in hotels and restaurants in 1967. For non-tipped workers, in restaurants, hotels and laundries, the minimum wage is introduced at \$1.

Figure 11: Impact of the 1966 FLSA on employment

(a) Intensive margin: annual number of hours worked



(b) Extensive margin: probability of being employed (vs. not unemployed or not in the labor force)

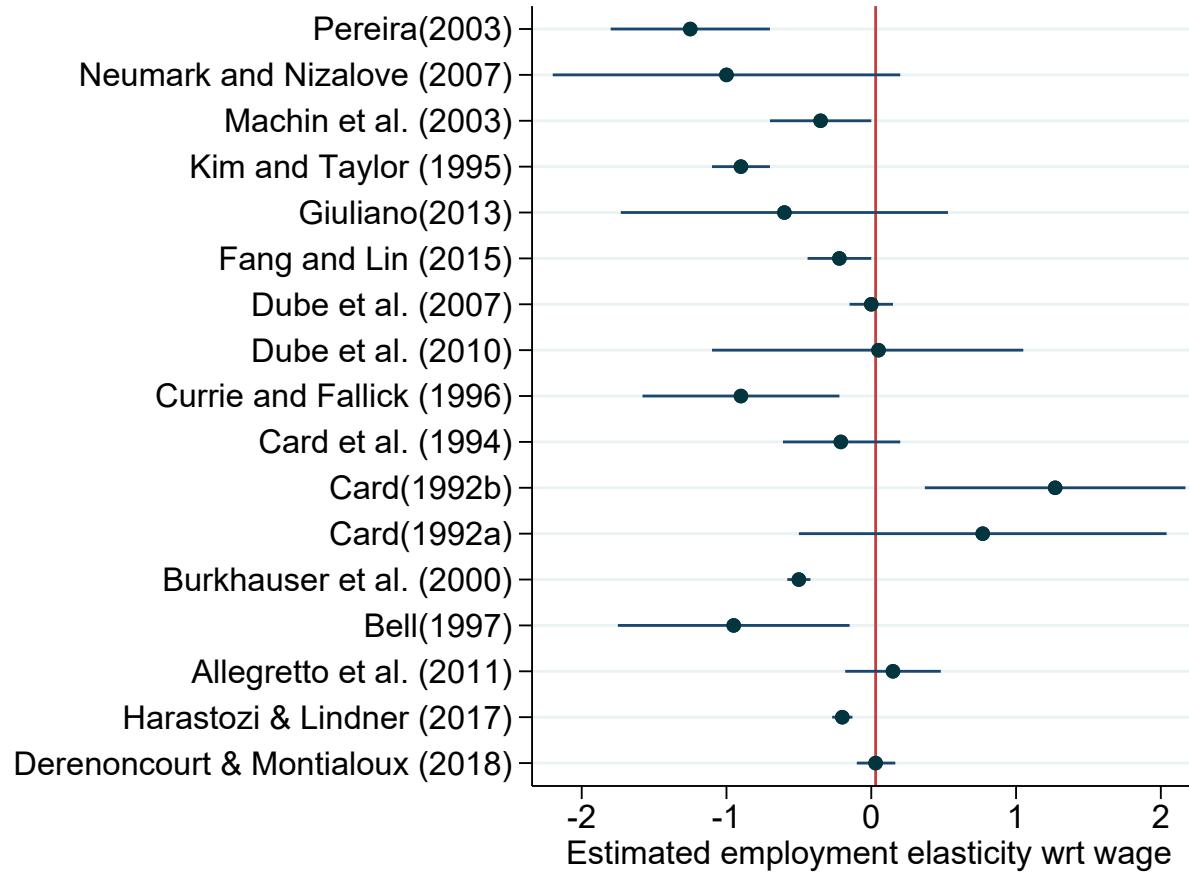


Source: March CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

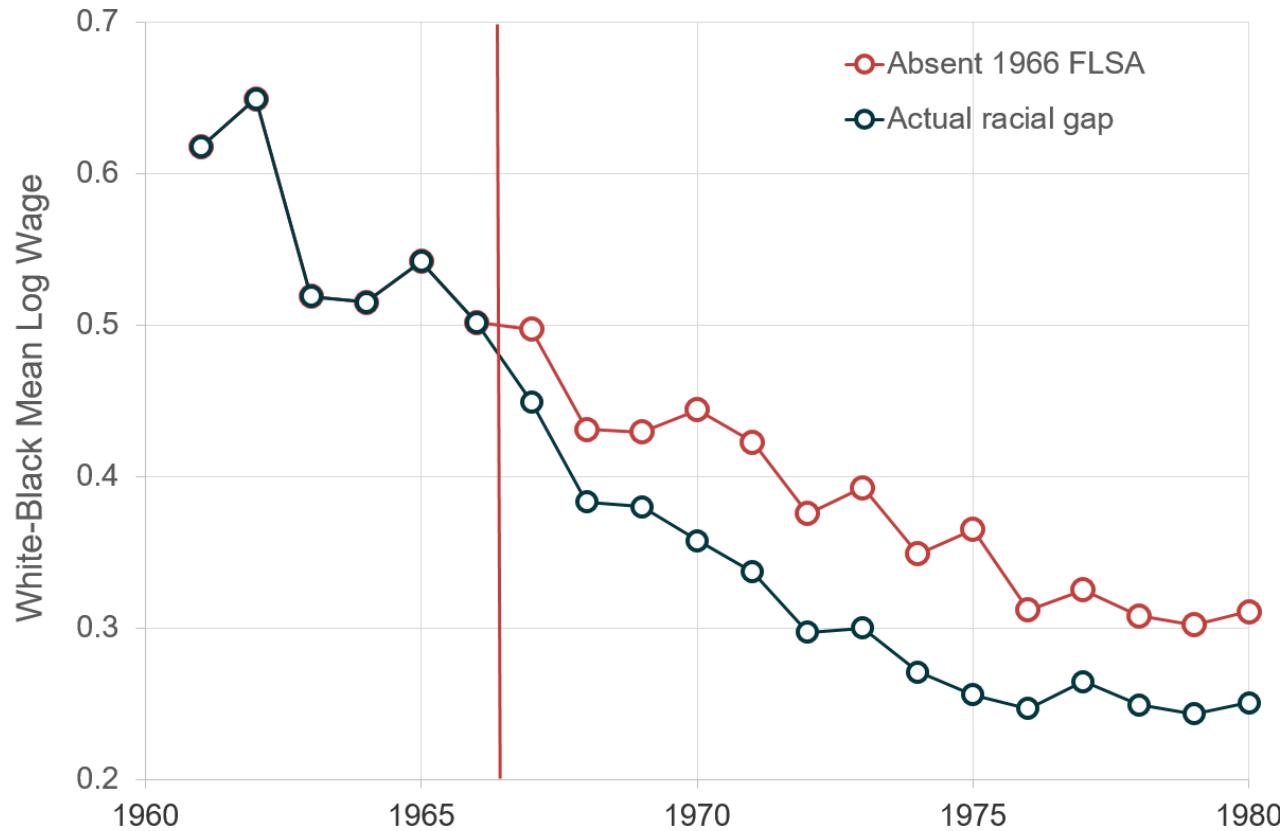
Notes: Panel (a) The annual number of hours is calculated as the ratio between annual earnings last year and the hourly earnings measure reconstructed using the information on the number of weeks worked and hours worked available in the CPS; Panel (b) the outcome of interest is the probability of being employed (vs. being unemployed or not in the labor force). Standard errors clustered at the industry and state (group) level. Includes state and time fixed effects.

Figure 12: Employment elasticities wrt wage in the literature and in this paper



Note: This figure is taken from [Harasztosi and Lindner \(Forthcoming\)](#), and adds our estimate in this paper. It summarizes the estimated employment elasticities with respect to the average wage, and compares it to the previous literature.
The red vertical line shows our estimate for the employment elasticity wrt wage (0.016).

Figure 13: 1967 reform reduced overall racial gap by $\sim 20\%$

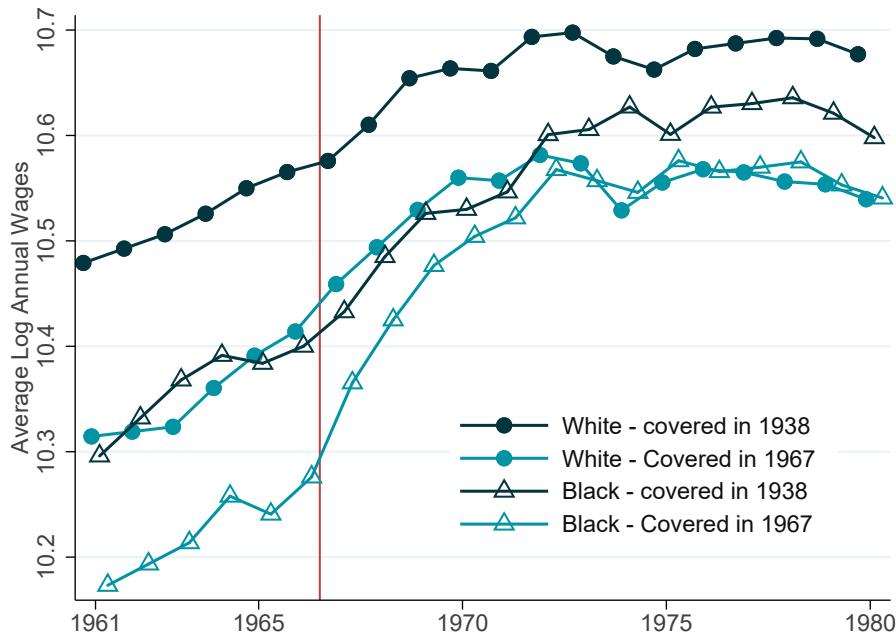


Source: March CPS 1962-1980.

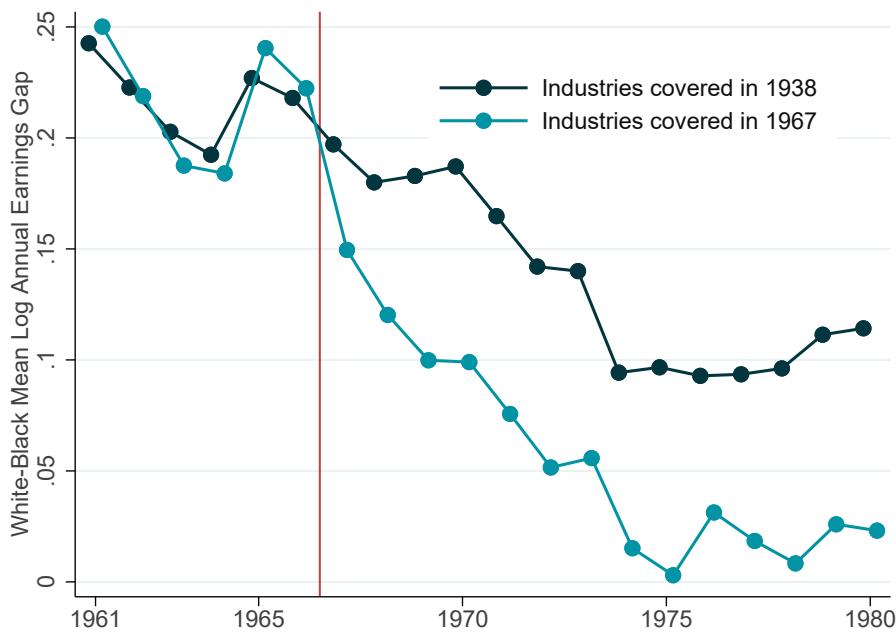
Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Figure 14: Adjusted racial wage gaps

(a) Wage effects in levels by race and treatment status



(b) Adjusted racial earnings gaps, by treatment status



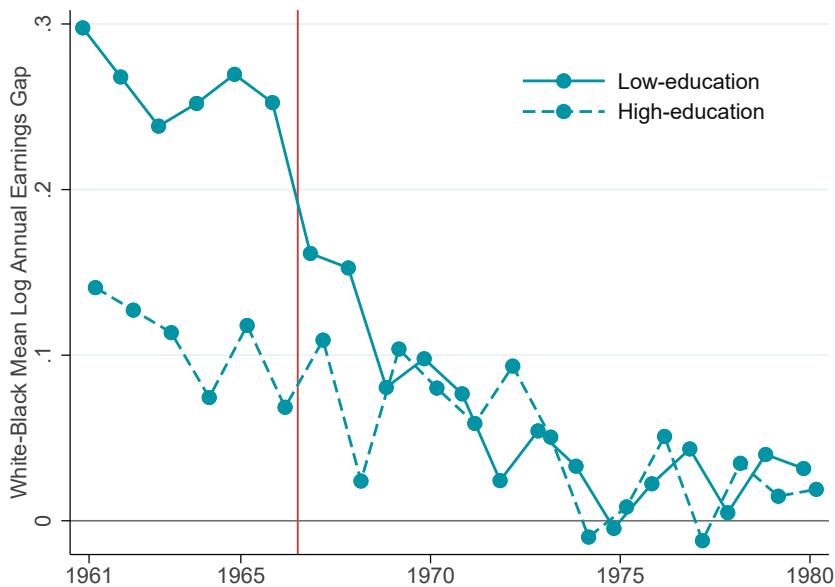
Source: March CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

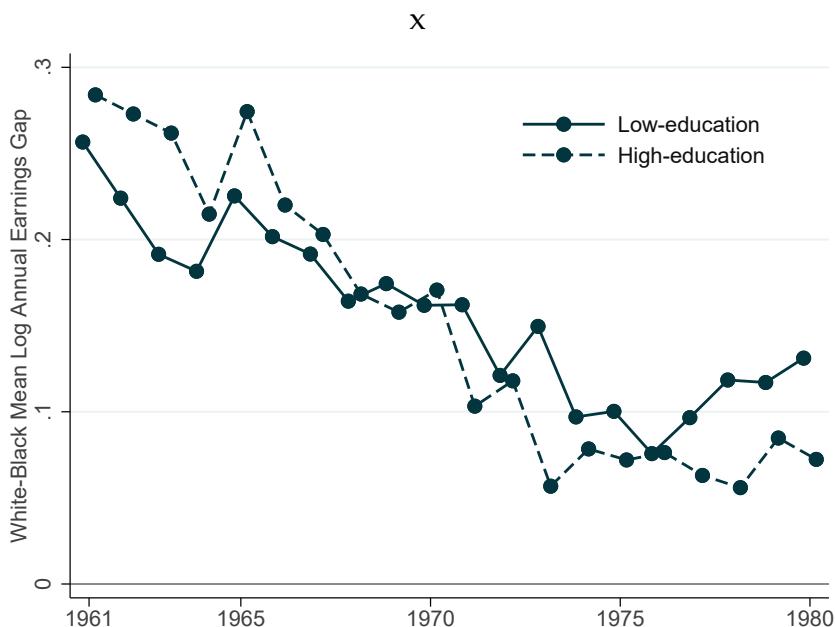
Notes: Racial earnings gap measures adjusted for gender, number of years of schooling, experience, full-time or part-time status, industry, occupation and marital status. In panel (a), the reference group is a male worker in 1965, 12 years of schooling, married, professional and technical occupation, working full-time full-year. In the bottom panel, the reference category is male workers working full time, 12 years of schooling, 5 years of experience, and working in Business and Repair Services.

Figure 15: Adjusted racial wage gaps, by level of education

(a) White-Black Earnings Gap (adjusted) in treated industries



(b) White-Black Earnings Gap (adjusted) in control industries



Source: March CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: Racial earnings gap measures adjusted for gender, number of years of schooling, experience, full-time or part-time status, industry, occupation and marital status.

Table 1: Employment, and earnings by race, 1967

	Employment		Employment shares		Earnings (\$2017)	
	Number	Percent	White	Black	White	Black
All industries	38,490,848	1.00	0.89	0.11	42,575	24,522
Industries covered by 1938 FLSA	20,663,098	0.54	0.92	0.08	46,469	29,174
Manufacturing	13,134,427	0.34	0.91	0.09	45,622	30,322
Transportation	2,960,552	0.08	0.93	0.07	47,750	28,620
Finance, Insurance	1,783,952	0.05	0.96	0.04	46,021	22,923
Wholesale Trade	1,445,985	0.04	0.94	0.06	53,229	25,547
Business & Repair	921,756	0.02	0.90	0.10	44,334	23,764
Mining	377,885	0.01	0.97	0.03	47,433	35,444
Forestry & fishing	38,539	0.00	0.83	0.17	34,261	15,804
Industries covered by 1961 FLSA	6,336,330	0.16	0.92	0.08	39,854	23,701
Retail trade	3,961,711	0.10	0.93	0.07	35,438	24,463
Construction	2,374,619	0.06	0.89	0.11	47,520	22,868
Industries covered by 1966 FLSA	7,962,920	0.21	0.86	0.14	33,435	21,405
Schools	2,913,630	0.08	0.90	0.10	38,560	30,513
Nursing homes	1,419,030	0.04	0.91	0.09	37,928	23,684
Hospitals	1,260,220	0.03	0.79	0.21	27,767	20,939
Hotels & laundries	741,447	0.02	0.76	0.24	25,581	16,667
Restaurants	777,805	0.02	0.86	0.14	22,344	15,777
Agriculture	599,313	0.02	0.75	0.25	24,406	11,685
Entertainment	251,475	0.01	0.87	0.13	44,099	22,524
Public Administration	2,848,719	0.07	0.87	0.13	46,944	35,436
Domestic service	679,782	0.02	0.31	0.69	10,054	8,381

Source: 1967 March CPS.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces.

Notes: Annual average earnings in \$2017, deflated using annual CPI-U-RS series. Employment numbers refer to the year 1967. Because the CPS collects information on earnings received during the previous calendar year, annual average earnings reported in this table were earned in 1966.

Table 2: Workers characteristics, 1965-66

	Control group		Treatment group	
	White	Black	White	Black
Annual earnings (in \$2017)	45,809	28,870	32,848	20,854
Age	39.8	38.8	39.9	39.0
<i>Gender</i>				
Male	0.76	0.80	0.43	0.39
Female	0.24	0.20	0.57	0.61
<i>Education</i>				
11 years of schooling or less	0.38	0.65	0.26	0.52
More than 11 years of schooling	0.62	0.35	0.74	0.48
<i>Marital status</i>				
Married	0.86	0.77	0.77	0.65
Single	0.13	0.15	0.22	0.22
<i>Region</i>				
North Central	0.29	0.26	0.28	0.18
North East	0.30	0.23	0.26	0.17
South	0.26	0.44	0.26	0.56
West	0.15	0.08	0.20	0.08
<i>Occupation</i>				
Operatives	0.33	0.52	0.04	0.12
Craftsmen	0.20	0.12	0.03	0.01
Clerical and kindred	0.16	0.07	0.14	0.06
Managers, Officials and proprietors	0.11	0.01	0.06	0.01
Professional and technical	0.10	0.02	0.42	0.21
Sales worker	0.05	0.00	0.00	0.00
Service worker	0.01	0.08	0.30	0.56
Other	0.03	0.17	0.01	0.02
<i>Full-time/part-time status</i>				
Full-time, full-year	0.87	0.79	0.68	0.67
Part-time	0.13	0.21	0.32	0.33

Source: March CPS 1966-67. Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces.

Table 3: Wage effect: Main results and robustness checks

	(1)	(2)	(3)	(4)	(5)	(6)
Covered in 1967 ×						
1967-1972	0.065** (0.025)	0.059** (0.024)	0.056** (0.022)	0.065** (0.023)	0.063** (0.023)	0.065** (0.029)
Obs	407,823	407,823	401,171	375,393	407,823	407,823
Controls	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y
State linear trends	N	Y	N	N	N	N
W/o agriculture	N	N	Y	N	N	N
Full-Time only	N	N	N	Y	N	N
Winsorized data	N	N	N	N	Y	N
2-way clusters	N	N	N	N	N	Y

Source: March CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: Standard errors clustered at the industry and state (group) level. Includes state, industry and time fixed effects.

Table 4: Predicted wage effect

	(1)	(2)	(3) = (1) × (2)	(4)
Share of workers at or below the MW (%)	Avg increase in earnings for MW workers (%)	Predicted increase in earnings (%)	Estimated increase in earnings (%)	
All	16.1	33.5	5.4	5.3
<i>By education</i>				
Low-education	31.4	33.0	10.4	10.0
High-education	9.6	34.2	3.3	2.5
<i>By race</i>				
Black	28.8	38.2	11.0	8.0
White	13.9	32.0	4.5	4.3

Source: March CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: Share of minimum wage workers = workers at or below the 1967 minimum wage. Estimates in col. (3) and (4) are for 1967 only.

Table 5: Hourly wage effect using BLS data

	Model 1		Model 2	
	Full sample	Strict sample	Full sample	Strict sample
1967-1969	0.110*** (0.034)	0.112*** (0.027)	0.089*** (0.029)	0.081*** (0.019)
1967-1969 × South			0.092*** (0.032)	0.136** (0.049)
Obs	167	89	167	89
Time FE	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Region FE	Y	Y	Y	Y

Source: BLS Industry Wage Reports. See figure 6b for the set of tabulations digitized.

Sample: All nonsupervisory employees.

Notes: the "full" sample contains industries listed in figure 6b. The "strict" sample excludes movie theaters and schools (only available pre- or post-reform) as well as years 1961-62, 1964, and 1966 where only treatment or control industries are available. Standard errors are clustered at the industry level.

Table 6: Wage effect by race

	Black	White
Covered in 1967 ×		
1967-1972	0.095*** (0.022)	0.054** (0.023)
1973-1980	0.078* (0.037)	0.036 (0.042)
Obs	37,770	370,053
Controls	Y	Y
Time FE	Y	Y
Industry FE	Y	Y

Source: March CPS 1962-1981.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: Standard errors clustered at the industry and state (group) level. Includes state, industry and time fixed effects.

Table 7: Effect of 1967 reform on total number of jobs

	Threshold for bottom	
	$1 \times \text{MW}$	$1.15 \times \text{MW}$
Laundries, South		
Employment		
1966-67 change, bottom (%)	2.8	1.5
1966-67 change, top [\$1.30+] (%)	3.0	3.0
1966-67 change, total (%)	11.5	11.5
Average Wages		
Bottom in 1966 (\$)	0.79	0.88
Bottom in 1967 (\$)	1.01	1.04
1966-67 change (%)	27.06	18.2
Employment Elasticity	0.48	-0.08
All industries, U.S.	$1.15 \times \text{MW}$	$1.20 \times \text{MW}$
Employment		
1966-67 change, bottom (%)	2.2	-1.3
1966-67 change, top [\$1.70+] (%)	0.8	0.8
1966-67 change, total (%)	2.2	2.2
Average Wages		
Bottom in 1966 (\$)	0.9	0.9
Bottom in 1967 (\$)	0.96	0.98
1966-67 change (%)	8.73	7.36
Employment Elasticity	0.16	-0.28

Source: BLS Industry Wage Reports. See figure 6b for the set of tabulations digitized.

Sample: All industries are composed of laundries, restaurants (non-tipped workers) and hotels (non-tipped workers).

Notes: The bottom of the distribution is the part of the distribution that is affected by the minimum wage: for example, it varies from $100\% \times$ the value of the minimum wage to $115\% \times$ the value of the minimum wage for laundries. The top of the distribution is the part of the distribution that is not affected by the minimum wage. For laundries in the South, we define the top of the distribution as the part of the distribution where hourly wages are at or above \$1.30 an hour in 1967 (i.e. the top 34% of the distribution). For all industries in the U.S., we define the top of the distribution as the part of the distribution where hourly wages are at or above \$1.70 an hour in 1967 (i.e. the top 28% of the distribution). The employment elasticity is calculated for the bottom of the distribution as the ratio between the employment change at the bottom and the average wage increase at the bottom.

Table 8: Effect of 1967 reform on annual number of hours worked (intensive margin)

	All	Black	White
Covered in 1967 ×			
1967-1972	-0.014 (0.012)	-0.006 (0.021)	-0.020 (0.012)
1973-1980	-0.021 (0.015)	-0.010 (0.022)	-0.027 (0.015)
Obs	407,757	37,763	369,994
Controls	Y	Y	Y
Time FE	Y	Y	Y
Industry FE	Y	Y	Y

Source: CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: The annual number of hours is calculated as the ratio between annual earnings last year and the hourly earnings measure reconstructed using the information on the number of weeks worked and hours worked available in the CPS. Standard errors clustered at the state (group) level.

Table 9: Effect of 1967 reform on probability of employment (extensive margin) and earnings

	All	Black	White
State with no mw law ×			
1967-1972			
Employment	0.004 (0.004)	0.016 (0.010)	0.005 (0.005)
Earnings	0.036*** (0.010)	0.115*** (0.024)	0.021** (0.008)
Obs	535,029	51,671	483,358
Controls	Y	Y	Y
Time FE	Y	Y	Y
State FE	Y	Y	Y

Source: CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: The outcome of interest is the probability of being employed (vs. being unemployed or not in the labor force). Standard errors clustered at the industry and state (group) level. Includes state and time fixed effects. Standard errors clustered at the state (group) level.

Appendix A Minimum wage database (1950-2017)

Content and access. We contribute a new minimum wage database for the United States at the state, industry and gender level. We believe this database improves previously released minimum wage databases³⁹ in three ways: (i) it starts in 1950, allowing for greater historical depth in the study of minimum wage effects than before;⁴⁰ (ii) it includes the information on minimum wage rates not only for the industries covered by the initial 1938 Fair Labor Standards Act, but also separately for the industries covered by subsequent amendments (1961, 1966, and 1974). Therefore, the minimum wage rates are industry-specific⁴¹, and this is particularly relevant for the period 1950-1974 ; (iii) it includes gender-specific minimum wage rates. This variation is also particularly relevant before 1980, after which the minimum wage legislation does not vary by gender anymore. We build the database in nominal terms at the monthly level, then collapse it at the annual level. Both databases and Stata do files used to create them are publicly available.⁴² We hope this database will help foster future research on the long-run evolution of minimum wages.

Sources. *Federal level.* The minimum hourly wage rates for employees covered by the 1938 Fair Labor Standards Act, the 1961 amendments, and the 1966 and subsequent amendments at the federal level are taken from the Department of Labor website.⁴³

State-level. The minimum hourly wage rates at the state level are taken from different sources, depending on the period of interest. From 1950 to 1980, we use tables published in the Report of the Minimum Wage Study Commission (1981) to get information on the minimum wage at the state, industry and gender level⁴⁴. We digitize and analyze in particular the information contained in Volume II, "State Minimum Wage Laws, 1950-1980", written by Aline O. Quester, Appendix Table 1A "State Minimum Wage Laws, 1950-80" (pp.32-121), Appendix Table 3A "Basic State Minimum Wage as a Fraction of Basic Federal Minimum Wage, 1950-1980" (pp.129-141) and Appendix Table 4A "New York State Minimum Wage Law"

³⁹There are, to our knowledge, two main published minimum wage databases for research purposes: (i) Vaghul and Zipperer (2016) dataset (1974-2016) (available at https://github.com/equitablegrowth/VZ_historicalminwage/releases), and (ii) Neumark (2018) dataset (1960-2017) (available at <http://www.economics.uci.edu/~dneumark/datasets.html>)

⁴⁰Vaghul and Zipperer (2016) starts in May 1974, and Neumark (2018) in 1960

⁴¹The industry classification used in the database is the one of the March CPS. See Appendix B for more details.

⁴²See <http://clairemontialoux.com>.

⁴³See Department of Labor, Wage and Hour Division, History of Federal Minimum Wage Rates Under the Fair Labor Standards Act, 1938-2009: <https://www.dol.gov/whd/minwage/chart.htm>.

⁴⁴Volume I & II are available at: <https://babel.hathitrust.org/cgi/pt?id=uiug.30112011667935;view=1up;seq=21>. All other volumes are available from: <https://catalog.hathitrust.org/Record/001304563>.

(pp.142-152). The coverage and exemption rules of the Fair Labor Standards Amendments we use are detailed in Appendix Table 2A (pp.122-128). Starting in 1980, we use the minimum wage dataset produced by Vaghul and Zipperer (2016). We update the values of the state minimum wage in 2017 using Neumark (2018).

Classification of industries by date of FLSA coverage. Which industry is covered by which amendment of the Fair Labor Standards Act? Table A1 shows the list of industries available in CPS 1962-1981 (see section B) in the first column, and how we classify them in terms of coverage by the Fair Labor Standards Act and its amendments (1961, 1966, 1974 and 1986) in the second column.⁴⁵ This classification is necessarily imperfect as it has to deal on one hand with the complexity of the minimum wage legislation and its grey areas⁴⁶ and on the other hand by the characteristics we can observe or not in the CPS. Our objective is to make the best choices as possible given those constraints and we clarify our choices below. This classification of industries is important for our analysis as our empirical strategy relies on the comparison between previously covered industries (covered in 1938) to newly covered industries (covered in 1966). We show that our main results are robust to slight changes in this classification.

The 1938 Fair Labor Standards Act stipulates that the minimum wage should be applied to "employees engaged in interstate commerce or engaged in the production of goods destined for the interstate commerce". Drawing on these lines, together with the list of exemptions specified in the law⁴⁷, we consider that the following industries are covered by the 1938 FLSA: mining, manufacturing (durable and non-durable), transportation, communication and other utilities⁴⁸, wholesale trade, finance, insurance and real estate, and business and repair services. These industries form our control group.

⁴⁵ FLSA as amended available at: <https://www.dol.gov/whd/regs/statutes/FairLaborStandAct.pdf>.

⁴⁶The minimum wage legislation does not only vary by industry. It also varies e.g. in the retail sector by a sales threshold per establishment, see below paragraph on 1961 Amendments. The legislation is also different for workers working overtime, varies by age, etc.

⁴⁷ For a full list of exemptions, see: Appendix Table 2A p.122 in Report of the Minimum Wage Study Commission (1981), Volume II. Note that the list of exemptions to the minimum wage has evolved over time. In particular, the 1949 Amendments, effective January 1950 expanded exemptions to laundry and dry cleaning establishments, and in retail and service establishments.

⁴⁸ A minority of workers in transportation were however not covered by the 1938 FLSA. Some transportation workers, originally not covered, became covered before our analysis starts, and it is therefore right for us to include them in the control group. This is the case of employees of air carriers who were covered in 1950. Other transportation workers were excluded from coverage even after our CPS analysis starts, as e.g. workers transporting fruits and vegetables from farm to first processing, or those transporting other workers to and from farms to harvesting purposes. Since those workers represent a minority of transportation workers, and since we are not able to identify them in the CPS data, we believe this approximation is not a threat to our empirical strategy.

The 1961 Amendments to the Fair Labor Standards Act extend coverage to all employees of retail trade enterprises⁴⁹ with sales over \$1m, and to small retailers under certain conditions⁵⁰. They also increase coverage to construction enterprises with sales over \$350,000. Retail trade establishments and construction are therefore only partially covered in 1961, and are further affected by the 1966 amendments, and subsequent amendments.⁵¹ Since in the CPS we do not have the information on the sales amount realized by the enterprise the worker is employed in, we are not able to identify retail trade or construction workers affected by the 1961 amendments vs. by later amendments. We therefore have to make a choice on how to classify retail trade and construction workers as a whole. Since for both types of workers, the 1961 amendments were the most important ones in terms of coverage extension, we classify retail trade and construction workers as treated in 1961. Retail trade and construction workers are therefore excluded from our main analysis that compares industries covered in 1938 to industries covered in 1966.⁵²

The 1966 Amendments to the Fair Labor Standards Act extended coverage to enterprises engaged in "a common business practice" that includes hospitals, institutions engaged in the care of the sick, aged, mentally ill or physically handicapped, as well as elementary and secondary schools, whether public or private,⁵³, to agriculture, and to service enterprises with sales above \$500,000. We therefore categorize the following industries as covered by the 1966 amendments: agriculture, restaurants, hotels, laundries and other personal services, entertainment and recreation services, nursing homes, and other professional services, hospitals, schools and other educational services. We discuss below where we had to make choices, their strengths and their limits.

Agriculture. Agriculture was covered for the first time in 1967. However, some exemptions applied in the agricultural sector, mainly for small farms⁵⁴. The minimum wage in agriculture

⁴⁹Retail trade excludes here eating and drinking places which were specifically exempted from the minimum wage in 1961.

⁵⁰ Small retailers are covered if (i) less than 50% of their sales are within state, (ii) more than 75% of their sales are for resale, or (iii) less than 75% of their sales are retail

⁵¹ The 1966 amendments extended coverage to retail trade enterprises with sales over \$500,000. In 1969, this threshold was reduced to \$250,000. It was further increased to \$350,000 in 1981, and to \$500,000 in 1990. See p.25 in Neumark, Washer (2010) for a history of minimum wage law in the retail sector. The \$500,000 threshold is still in place today, see Department of Labor website: <https://www.dol.gov/whdregs/compliance/whdfs6.pdf>.

⁵² 50% of all retail trade became covered in 1961, 24% were covered by the 1966 amendments and the remaining 26% were covered later. Source: see Table 2. p.22 in Minimum Wage and Maximum Hours Standards Under the Fair Labor Standards Act (1973), Survey conducted by the Labor Statistics for the Employment Standards Administration.

⁵³ The 1972 higher Education Act extended the minimum wage coverage to "preschools" (representing roughly 150,000 individuals), see p.126 of the Report of the Minimum Wage Study Commission (1981), Volume II.

⁵⁴ There were four notable exemptions in agriculture: (i) employees of farms employing less than 500 mandays of nonexempt labor in the highest quarter of the previous year; (ii) family members; (iii) local hand harvest

was introduced at a lower rate than the federal rate, and fully converges to the federal rate only ten years later (see 2).

Services. There are two potential concerns about classifying restaurants, hotels, laundries and other personal services, entertainment and recreation services as industries covered in 1966: one might worry that these services were (i) already partially covered by the 1961 amendments, and (ii) that the 1966 amendments were still realizing partial coverage for those sectors, since service enterprises with annual sales below \$500,000 were not covered. Regarding (i): Although it is true that the 1961 Amendments introduces coverage in service enterprises with sales greater than \$1m, the amendments also excluded the following industries from coverage, regardless of the amount of gross sales: hotels, motels, restaurants, laundry and dry cleaning establishments, seasonal and recreational establishments. Therefore, a closer reading of the 1961 amendments allow us to consider that the services listed above were not covered by the 1961 amendments and started to be covered in 1966. Regarding (ii): What the 1966 amendments does is to introduce coverage for those sectors in enterprises with sales greater than \$500,000. Those services were therefore partially treated in 1966, except for laundries and dry cleaning services which were fully covered – regardless of any sales amount. We estimate that the share of coverage in restaurants, hotels, and entertainment and recreation services was high. Last but not least, a tipped minimum wage was introduced in restaurants and hotels in 1966. Hourly wages of tipped employees may legally be adjusted to reflect allowance of up to 50 % of the minimum wage for tips actually received. Since we observe annual earnings in the CPS, that includes all tips, we do not believe the fact that the tipped minimum wage was introduced in those industries be a threat to our results.

The 1974 Amendments to the Fair Labor Standards Act extend coverage to employees of all public agencies (federal, state and local), and to private household domestic service workers. We therefore classify federal workers and domestic service workers as covered in 1974. ⁵⁵ Importantly, we did not classify state and local government workers as covered in 1974. Rather, we include them in the database in 1986. This is because, shortly after minimum

laborers paid on a piece rate basis who worked less than < 13 weeks in preceding year; (iv) employees in range production of livestock. The agriculture exemption was further reduced in the 1974 amendments, by including within the 500 manday count the employment of local hand harvest labor.

⁵⁵Not all federal workers and domestic workers were covered by the 1974 Amendments. Among federal workers: a few federal employees were already covered by a minor amendment in 1966, in very special circumstances. Some others, such as federal criminal investigators were excluded from coverage, as is still the case today, see <https://webapps.dol.gov/elaws/whd/flsa/screen75.asp>. Among domestic workers: only domestic service workers who met Social Security qualifications were covered by the 1974 amendments. The minimum wage extension essentially applies to housekeepers, day workers, chauffeurs, full-time babysitters and cooks. Babysitters on a casual basis are still excluded from minimum wage coverage today.

wage coverage was extended to state and local government workers starting in May 1974, the Supreme Court in the National League of Cities v. Usery ruled that the Fair Labor Standards Act could not be applied to state and local government employees engaged in activities which are traditional government functions (i.e. fire prevention, police protection, sanitation, public health and parks and recreation).⁵⁶ Coverage was extended to state and local government workers from January 1, 1986 after U.S. Supreme Court reversal.⁵⁷

Uses. We are interested in knowing which minimum wage rate applies to each worker depending on his/her state, industry and gender. We merge our minimum wage database with March CPS files (1962-1980). We are also interested in knowing the average minimum wage that applies in each state. Therefore, we calculate several measures of the minimum wage that we include in the minimum wage database.

The minimum wage by year y , month m , industry j , state s , and gender g , denoted mw_{ymjsg} is obtained by analyzing of the data sources described above.

The minimum wage by year y , month m , industry j , state-group S and gender g , denoted mw_{ymjSg} is calculated by averaging the minimum wage at the state level mw_{ymjsg} across state groups, depending on the number of workers N_{sjg} working in each of the K states within a state group S :⁵⁸

⁵⁶See Supreme Court in the National League of Cities v. Usery (6/24/76): <https://supreme.justia.com/cases/federal/us/426/833/>

⁵⁷ Note that certain state and local employees started to be covered by the minimum wage by the 1966 Amendments. In September 1975, before the coverage was overturned by U.S. Supreme Court, the Employment Standard's Administration estimated that 3.1 million state and local government workers were covered under the 1966 amendments and 3.8 million more under the 1974 amendments. In September 1976, after the coverage was overturned by U.S. Supreme Court, the Employment Standard's Administration estimated that there were only 116,000 under the 1966 amendments, and 221,000 under the 1974 amendments. See p.126 of the Report of the Minimum Wage Study Commission (1981), Volume II. Because of these specificities, and because we could not identify clearly the state and local government workers covered by the 1966 Amendments, we've focused our analysis on the private sector, and we exclude all public administration workers.

⁵⁸Note that we have no direct information on the number of workers by state, industry and gender N_{sjg} , due to the limitations of the March CPS files (see section sec: March CPS). Instead, we have information on the number of workers at the state-group, industry and gender in the March CPS. We approximate N_{sjg} by assuming that (1) within each state-group, the number of workers at the state level is proportional to the size of the population in that state, and (2) the share of male and female workers in each state is similar to the male and female employment share at the state-group level. The data on the size of the population at the state level is given by the Census Bureau: from 1950 to 1999, we scrap the text files from <https://www2.census.gov/programs-surveys/popest/tables/>; from 2000 to 2009, we download "stest00int - 01.csv" from <https://www2.census.gov/programs-surveys/popest/tables/>. From 2010-2017, we use "nst - est2017 - 01.xlsx" from <https://www2.census.gov/programs-surveys/popest/tables/2010-2017/state/totals/>. For the years 1950, 1960, 1970, 1980, 1990, 2000, and 2010, we use the census counts on April 1st. For the remaining years, we use intercensal estimates as of each July 1.

Table A1: List of industries used in March CPS (1962-1980), and year of coverage by FLSA

1	Agriculture	1966
2	Forestry and Fishing	1966
3	Mining	1938
4	Construction	1961
5	Durable manufacturing	1938
6	Food manufacturing	1938
7	Other non-durable manufacturing	1938
8	Transportation, Communication, and Other Utilities	1938
9	Wholesale Trade	1938
10	Restaurants	1966
11	Retail Trade	1961
12	Finance, Insurance, and Real Estate	1938
13	Business and Repair Services	1938
14	Private households	1974
15	Hotels, laundries and other personal services	1966
16	Entertainment and Recreation Services	1966
17	Nursing homes and other professional services	1966
18	Hospitals	1966
19	Schools and other educational services	1966
20	Federal government	1974
21	State or local government	1986
22	Postal service	1938
23	Other	1938

Source: Authors' analysis of March CPS 1962-1980 and of the Fair Labor Standards Act and its amendments.

Notes: The retail trade sector excludes restaurants. Control group industries are listed in dark blue.

Treated industries are listed in light blue.

$$mw_{ymjSg} = \frac{1}{\sum_{s=1}^K N_{jsg}} \sum_{s=1}^K mw_{ymjs} \quad (7)$$

The minimum wage by year, month, industry, and state-group , denoted mw_{ymjS} is calculated by averaging the minimum wage at the state-group level mw_{ymjs} across genders, depending on the number of female and male workers N_{jsg} in each state group:

$$mw_{ymjS} = \frac{1}{\sum_{g=1}^2 N_{jsg}} \sum_{g=1}^2 mw_{ymjSg} \quad (8)$$

The minimum wage by year, month, industry, denoted mw_{ymj} is calculated by averaging the minimum wage at the state-group level mw_{ymjS} across industries, depending on the number of workers N_{js} within M state-groups:

$$mw_{ymj} = \frac{1}{\sum_{S=1}^M N_{js}} \sum_{S=1}^M mw_{ymjS} \quad (9)$$

The minimum wage by year, month, industry type T (whether control or treatment), denoted mw_{ymT} is calculated by averaging the minimum wage at the industry level mw_{ymj} across industry type (control or treatment), depending on the number of workers N_j within control (c) or treatment (t) industries:

$$mw_{ymT} = \frac{1}{\sum_{T=j_c}^t N_{jt}} \sum_{T=j_c}^{j_t} mw_{ymj} \quad (10)$$

Finally, we convert nominal minimum wage rates into real minimum wage rates using the CPI-U-RS.⁵⁹

⁵⁹The annual CPI-U-RS series are available since 1947 at: <https://www2.census.gov/programs-surveys/demo/tables/p60/> (as of March 13 2018), folder 259.

Appendix B March CPS (1962-1981)

This paper uses data from the March Current Population Survey (CPS)⁶⁰ to analyze the effect of the 1966 Fair Labor Standards Act on annual earnings, employment and on racial inequality. As noted in IPUMS documentation⁶¹, the early CPS files (1962-1967) were not officially released by the U.S. Census Bureau as public use files. Because these files were used by researchers at the University of Wisconsin, those files were preserved in the data archive at the Center for Demography and Ecology at the University of Wisconsin. The most recent version of those early files has been made public by IPUMS on February 23, 2009⁶². In particular, the IPUMS version of the CPS early files has an harmonized industry variable.

B.1 Sample of interest

Figure A16 displays how we divide the CPS sample into four categories for the purpose of our analysis: (i) Not in universe, (ii) employed, (iii) unemployed, and (iv) not in the labor force.

Not in universe. We include all minors, i.e. children,⁶³ and teenagers below 21.⁶⁴, and older individuals (aged 66 and above). We also remove self-employed workers from our universe of interest, since the minimum wage does not apply to them. Finally, we exclude all unpaid family workers, all individuals in grouped quarters, all workers working less than 13 weeks a year⁶⁵, and more than 3 hours a week, and all individuals with a missing industry or occupation.

Employed. We include all adult workers (21-64), whether employed and at work last week or employed but not at work last week. Our analysis sample – the sample on which we conduct the bulk of our analysis of the effect of the 1966 reform on wages, and on the racial earnings gap (section 3), is conducted on prime age workers (25-55).

Unemployed or not in the labor force. When analyzing the employment effects of the 1966

⁶⁰Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 5.0 [March CPS]. Minneapolis, MN: University of Minnesota, 2017. <https://doi.org/10.18128/D030.V5.0>

⁶¹See https://cps.ipums.org/cps/asec_sample_notes.shtml

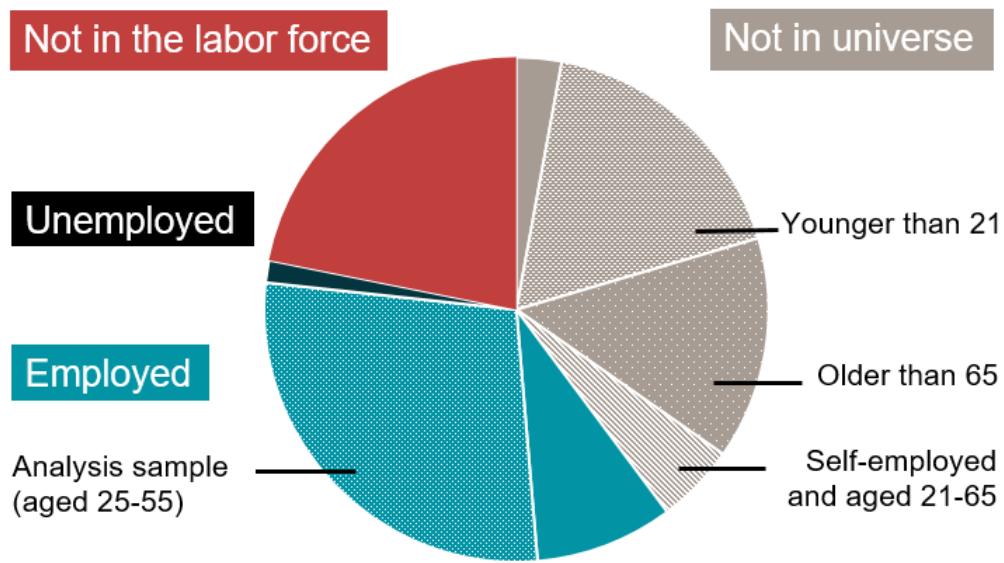
⁶²See <https://cps.ipums.org/cps-action/revisions>

⁶³From March CPS 1962 to 1979, the lowest age cut-off for employment questions us 14. It is 15 starting in 1980. For more information on the evolution of the universe of CPS employment questions, see: https://cps.ipums.org/cps-action/variables/IND#universe_section.

⁶⁴ The minimum wage legislation for minors is very different from the minimum wage for adults, and we've excluded teenagers so that we do not introduce this layer of heterogeneity in the treatment.

⁶⁵Starting in 1967, the minimum wage is introduced in agriculture, except for some employees, in particular, for local hand harvest laborers paid on a piece rate basis who worked less than 13 weeks in the preceding year. See report of the minimum wage study commission (1981), volume II, p.124.

Figure A16: Analysis sample, before the reform (1966)



Source: Authors' analysis of March CPS 1967.

reform (section 5), we look at the probability of being employed, vs. unemployed or not in the labor force, and restrict the sample of analysis to adults aged 25-55.

B.2 State crosswalks

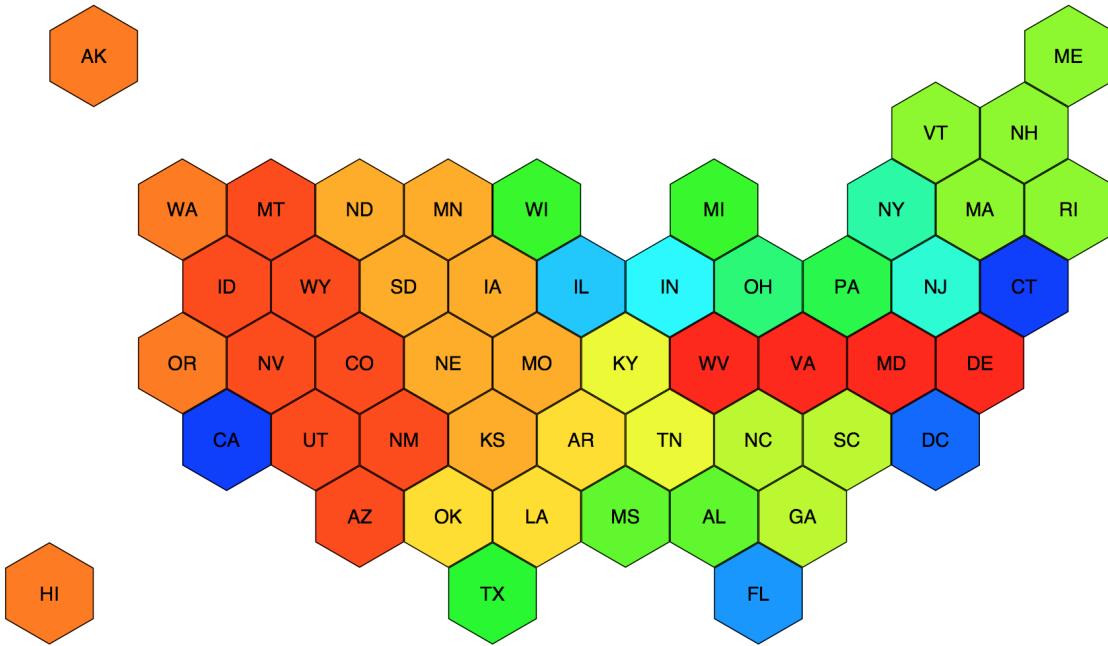
In some years, states are identified with their Federal Information processing standard (FIPS) state codes, and in some others (March CPS 1962, 1968-1971, 1972, and 1973-1976) some states are grouped together, and it's impossible to uniquely identify the state to which the interviewee belong. For example, in March CPS 1968-1971, Minnesota and Iowa are identified as a group: we don't know whether the individuals surveyed in those years are living in Minnesota or Iowa, we just know they live in one of those two states. In addition, the state grouping is different across years. To overcome the state grouping and the inconsistency in the coding of the state variable across time, we've built a new variable that identifies homogeneous state groups for our period of interest. In total, we are able to identify 21 state groups (see table A2). States were not grouped in the CPS at random: states grouped together are geographically close to each other, and the borders of state-groups never cross division or region lines (figure A17). To a certain extent, the state groups share similar economic conditions. A detailed crosswalk, for every year of the CPS, is available online at: <http://clairemontialoux.com>.

Table A2: List of state groups used in March CPS (1962-1980)

1	Agriculture	1966
2	Forestry and Fishing	1966
3	Mining	1938
4	Construction	1961
5	Durable manufacturing	1938
6	Food manufacturing	1938
7	Other non-durable manufacturing	1938
8	Transportation, Communication, and Other Utilities	1938
9	Wholesale Trade	1938
10	Restaurants	1966
11	Retail Trade	1961
12	Finance, Insurance, and Real Estate	1938
13	Business and Repair Services	1938
14	Private households	1974
15	Hotels, laundries and other personal services	1966
16	Entertainment and Recreation Services	1966
17	Nursing homes and other professional services	1966
18	Hospitals	1966
19	Schools and other educational services	1966
20	Federal government	1974
21	State or local government	1986
22	Postal service	1938
23	Other	1938

Source: Authors' analysis of March CPS 1962-1980.

Figure A17: State groups used in March CPS (1962-1980)



Source: Authors' analysis of March CPS 1962-1980.

States not identified. In March CPS 1963, 1964 and 1972, there are a few observations for which the state of the person interviewed was not reported and marked as "not identified." Within our sample of interest,⁶⁶ a few workers were in a state that was not identified: 25 in March CPS 1963 (0.2% of the representative sample of interest), 40 in March CPS 1964 (0.3%), and 13 in March CPS 1972 (0.04%). These observations are dropped from our analysis. Given the small number of workers involved, we believe this does not introduce any bias in our results.

B.3 Industry crosswalks

There are several industry codes available in CPS IPUMS, and their classification varies across time. We create our own industry variable, harmonized across time, and consistent with the 1950 Census Bureau industrial classification system.

To construct a harmonized industry code, we use two industry variables available in

⁶⁶Our sample of interest is the sample we use to perform our analysis: Adults 25-55, employed, not self-employed or unpaid family worker, not in grouped quarters, has positive, non-missing income variable, works more than 13 weeks a year and more than 3 hours last week, has a non-missing industry or occupation code.

CPS IPUMS: IND,⁶⁷ from March CPS 1962-1967, and IND1950,⁶⁸ from March 1968-1981. In both cases, the industry variable reports the industry in which the person performed his or her primary occupation. In both cases as well, the classification system used is consistent with the 1950 Census Bureau industrial classification system.⁶⁹ However, the two industry codes differ by their precision: Codes for March CPS 1962-1967 are two digits, and the classification scheme uses 44 codes. Codes for March CPS 1968-1981 are three digits, and the classification scheme uses 148 codes. Therefore our harmonized industry code cannot be more precise than the industry code for 1962-1967. Our final industry classification uses 23 codes (see table A1 above). Importantly, this classification allows us to disentangle industries covered by the Fair Labor Standards Act from those covered by its subsequent amendments. The detailed industry crosswalk is available online at: <http://clairemontialoux.com>.

B.4 Topcoding

For confidentiality reasons, the income of individuals with extremely high incomes is top-coded in the CPS.

Before 1996, no replacement is provided in the CPS. We replace the topcoded values by 1.5 the value of the highest non-topcoded income. This replacement is done by industry type (covered in 1938, 1961, 1966, 1974 or 1986).⁷⁰ Among employed individuals in March CPS 1962-1972,⁷¹ less than 1% of the sample has topcoded incomes. This share increases progressively in the 1970s and reaches almost 5% in 1978, 8% in 1979, and peaks at 10% in 1980. Starting in 1981, this share is consistently below 5% (except for the years 1992-1994 where it is between 5% and 8%).⁷²

After 1996, topcoded values are replaced with values that vary with individual characteristics (gender, race, and full-time/part-time status).⁷³

⁶⁷ See: https://cps.ipums.org/cps-action/variables/IND#description_section.

⁶⁸ See: https://cps.ipums.org/cps-action/variables/IND1950#description_section.

⁶⁹ For a confirmation that the IND variable for March 1962-1967 is consistent with the 1950 Census Bureau classification system, see the sentence "IND classifies industries according to the contemporary Census Bureau classification systems" here: https://usa.ipums.org/usa-action/variables/IND#comparability_section. The variable IND1950 is consistent with the 1950 Census Bureau industrial classification system by construction, see discussion in the section "Integrated Occupation and Industry Codes and Occupational Standing Variables in the IPUMS" here: <https://usa.ipums.org/usa/chapter4/chapter4.shtml>.

⁷⁰ This is consistent with assuming that the distribution of incomes Pareto distributed, with a pareto coefficient of 3, that is typically used in the literature on top-income earners (Piketty et al., 2018).

⁷¹ We refer here to employed individuals in our analysis sample: Adults 25-55, employed, not self-employed or unpaid family worker, not in grouped quarters, has positive, non-missing income variable, works more than 13 weeks a year and more than 3 hours last week, has a non-missing industry or occupation code.

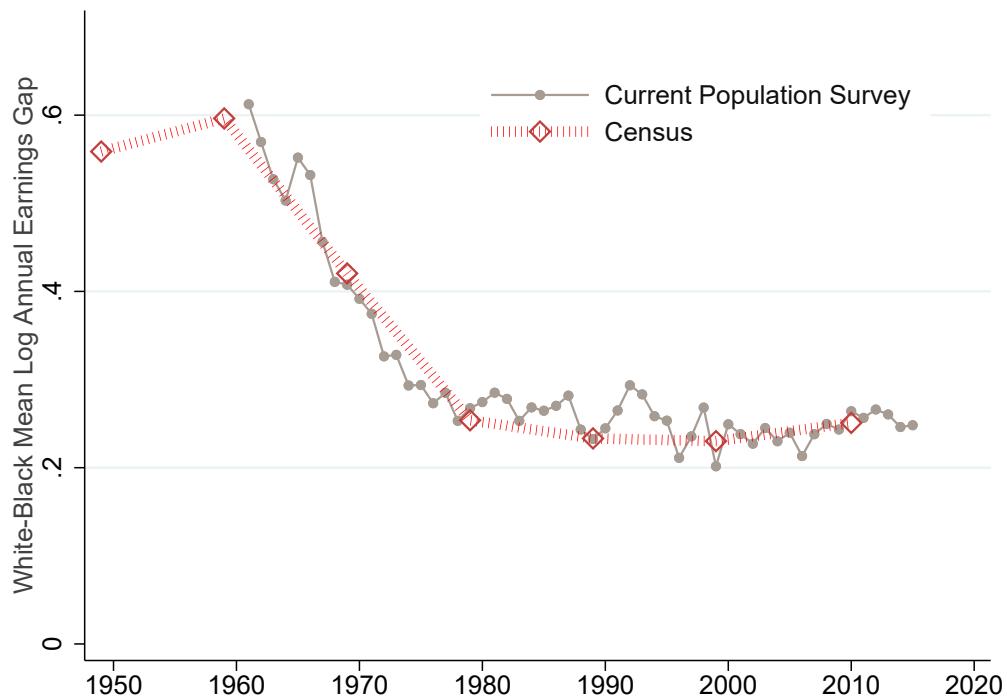
⁷² The stata do files that deal with topcoding are available on: <http://clairemontialoux.com>.

⁷³ For CPS samples starting in 1996, see replacement values here for the variable INCWAGE: <https://cps>.

B.5 Comparing CPS and Census data

We compare decennial Census of Population from 1960 to 1980 (covering earnings data for 1959-1979) and the March CPS from 1962 to 1981 (covering earnings for 1961-1980) data to check the quality of CPS files. Employment counts are similar across the two data sets, see table A3. On notable exception, however, are the first two years of the CPS, where the employment counts are much lower than in the 1960 Census, and much lower than in later years of the CPS (starting in the March CPS 1964). A fraction of workers in the CPS 1962 and 1963 have been categorized – wrongly – as not in the labor force. On all other dimensions, however, the first two years of the CPS are similar to the 1960 Census. Table A3 shows that the 1960 Census and the March CPS 1962 and 1963 match well in terms of the relative shares of white and black workers, male and female workers, or their annual earnings. We exclude the March CPS 1963 from our analysis as it also suffers from a lower number of observations, and lacks demographic information (such as education level) for the entire population. Finally, we show that the unadjusted racial earnings gaps are remarkably aligned in the Census and in the March CPS from 1960 to today (see figure A18).

Figure A18: Economy-wide white-black unadjusted wage gap in the long-run, in the CPS and in the decennial Censuses



Source: Annual Social and Economic Supplement of the Current Population Survey, 1962-2016; US Census from 1950 to 2000, and American Community Survey data in 2010 and 2017.

Sample: Adults 25-65, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces.

Notes: The racial gap is calculated as difference in the average log annual earnings of black workers and the average log annual earnings of white workers. There is no adjustment for any observables. The CPS and the censuses collect information on earnings received during the previous calendar year. Therefore, we report estimates of the racial gap e.g. in the 1950 Census in 1949, and in the 1962 in 1961. For the ACS, the reference period is the past 12 months, and we report estimates of the racial gap in the ACS 2010 and 2017 in the current year. The economy-wide racial gap is defined here as the combination between the industries covered in 1938 and the industries covered in 1967.

Table A3: Observations, employment, and wages in the March CPS and in Censuses

	Observations	Employment	Employment shares				Earnings (\$2017)			
			White	Black	Men	Women	White	Black	Men	Women
March CPS										
1962	13,540	24,086,400	0.90	0.10	0.68	0.32	37,176	19,523	42,029	21,113
1963	9,638	22,277,274	0.90	0.10	0.68	0.32	37,607	18,865	42,412	21,267
1964	14,222	34,344,403	0.89	0.11	0.68	0.32	38,736	21,529	44,216	21,343
1965	14,126	34,637,727	0.89	0.11	0.68	0.32	39,677	22,997	45,379	22,158
1966	30,113	37,407,666	0.89	0.11	0.68	0.32	41,196	23,168	47,224	22,461
1967	19,191	38,490,848	0.89	0.11	0.68	0.32	42,575	24,522	49,036	23,091
1968	30,277	39,451,389	0.89	0.11	0.66	0.34	43,219	26,019	50,127	24,098
1969	30,808	40,044,846	0.89	0.11	0.66	0.34	44,575	28,242	52,070	24,935
1970	29,626	40,963,562	0.90	0.10	0.66	0.34	47,062	29,253	55,248	26,015
1971	29,130	40,594,657	0.89	0.11	0.65	0.35	47,563	30,486	55,870	26,946
1972	28,214	41,861,238	0.90	0.10	0.65	0.35	47,460	30,936	55,969	27,039
1973	28,025	42,659,268	0.89	0.11	0.64	0.36	49,744	33,601	59,060	28,255
1974	27,620	43,773,753	0.90	0.10	0.64	0.36	49,962	33,810	59,852	28,155
1975	26,474	43,108,371	0.90	0.10	0.63	0.37	48,364	34,284	58,235	27,912
1976	28,407	44,987,015	0.90	0.10	0.62	0.38	47,557	33,346	57,386	27,866
1977	33,944	46,526,101	0.90	0.10	0.61	0.39	48,197	34,215	58,382	28,390
1978	33,936	48,250,592	0.89	0.11	0.61	0.39	48,588	34,812	59,187	28,665
1979	34,468	50,109,925	0.90	0.10	0.60	0.40	48,789	36,335	59,923	29,044
1980	41,137	51,461,168	0.90	0.10	0.58	0.42	48,862	36,004	60,306	29,636
1981	41,859	53,389,185	0.90	0.10	0.58	0.42	47,624	34,640	58,541	29,490
US Census										
1960	1,662,241	33,244,820	0.90	0.10	0.69	0.31	35,857	19,429	40,231	20,684
1970	403,015	40,301,500	0.90	0.10	0.65	0.35	46,243	30,102	54,341	26,724
1980	2,613,374	52,267,480	0.89	0.11	0.58	0.42	46,870	36,367	57,205	29,905

Sources: March CPS 1962-1981. US Censuses 1960 (5% sample), 1970 (1%), and 1980 (5%).

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces.

Notes: Annual average earnings in \$2017, deflated using annual CPI-U-RS series. Employment numbers refer to the years 1962 to 1981 in the March CPS, and to the years 1960, 1970 and 1980 in the decennial Censuses. The March CPS 1962-1981 covers earnings data from 1961-1980. The decennial Censuses of 1960, 1970 and 1980 cover earnings data of 1959, 1969 and 1979.

Appendix C Economy-wide racial gap

We define the economy-wide racial earnings gap as the mean log wage difference between white and black workers in the industries covered in 1938 and in 1967 combined. Let's denote G^{total} , this economy-wide racial earnings gap. It's defined as:

$$\begin{aligned} G^{\text{total}} &= \frac{1}{N_w} \sum_i \log(\omega_i^w) - \frac{1}{N_b} \sum_i \log(\omega_i^b) \\ &= \bar{X}_w - \bar{X}_b \end{aligned} \quad (11)$$

with $\log(\omega_i^w)$ (respectively $\log(\omega_i^b)$), the log of wages of white (respect. black) workers ; N_w (respect. N_b) the number of white vs. black workers. We denote \bar{X}_w (respectively \bar{X}_b the average log wages of white (respectively black) workers).

By noting that average log wages overall can be decomposed into a treatment and a control group component, we write:

$$\begin{aligned} \bar{X}_w &= \frac{1}{N_w} \sum_i \log(\omega_i^w) \\ &= \frac{N_w^c}{N_w} \cdot \frac{1}{N_w^c} \sum_{i,w} \log(\omega_i^c) + \frac{N_w^t}{N_w} \cdot \frac{1}{N_w^t} \sum_{i,w} \log(\omega_i^t) \\ &= s_w^c \cdot \frac{1}{N_w^c} \sum_{i,w} \log(\omega_i^c) + s_w^t \cdot \frac{1}{N_w^t} \sum_{i,w} \log(\omega_i^t) \end{aligned} \quad (12)$$

With s_w^c (respectively s_b^c) the share of white (resp. black) workers working in the control group, s_w^t (respectively s_b^t) the share of white (resp. black) workers working in the treatment group. Note that: $s_w^c + s_w^t = 1$. Similarly, $s_b^c + s_b^t = 1$. It follows that:

$$\begin{aligned} G^{\text{total}} &= s_w^c \bar{X}_w^c + s_w^t \bar{X}_w^t - s_b^c \bar{X}_b^c - s_b^t \bar{X}_b^t \\ &= (s_w^c \bar{X}_w^c - s_b^c \bar{X}_b^c) + (s_w^t \bar{X}_w^t - s_b^t \bar{X}_b^t) \\ &= (s_w^c \bar{X}_w^c - s_w^c \bar{X}_b^c) + (s_w^t \bar{X}_w^t - s_w^t \bar{X}_b^t) + s_w^c \bar{X}_b^c - s_b^c \bar{X}_b^c + s_w^t \bar{X}_b^t - s_b^t \bar{X}_b^t \\ &= s_w^c G_c + s_w^t G_t + \underbrace{\bar{X}_b^c(s_w^c - s_b^c) + \bar{X}_b^t(s_w^t - s_b^t)}_{=\lambda} \end{aligned} \quad (13)$$

$$\begin{aligned}
\lambda &= s_w^c G_c + s_w^t G_t + \bar{X}_b^c (s_w^c - s_b^c) + \bar{X}_b^t (s_w^t - s_b^t) \\
&= s_w^c \bar{X}_b^c - s_b^c \bar{X}_b^c + s_w^t \bar{X}_b^t - s_b^t \bar{X}_b^t \\
&= s_w^c \bar{X}_b^c - s_w^c \bar{X}_b^t + s_w^c \bar{X}_b^t - s_b^c \bar{X}_b^c + s_w^t \bar{X}_b^t - s_b^t \bar{X}_b^t - (s_b^c \bar{X}_b^c - s_b^c \bar{X}_b^t + s_b^c \bar{X}_b^t - s_w^t \bar{X}_b^t) \\
&= s_w^c G_b^{ct} + s_w^c \bar{X}_b^t - s_b^t \bar{X}_b^t - (s_b^c G_b^{ct} + s_b^c \bar{X}_b^t - s_w^t \bar{X}_b^t) \\
&= s_w^c G_b^{ct} - s_b^c G_b^{ct} + \bar{X}_b^t \times (\underbrace{s_w^c + s_w^t}_{=1} - \underbrace{(s_b^c + s_b^t)}_{=1}) \\
&= s_w^c G_b^{ct} - s_b^c G_b^{ct}
\end{aligned} \tag{14}$$

Therefore:

$$G^{\text{total}} = s_w^c G_c + s_w^t G_t + G_b^{ct} (s_w^c - s_b^c) \tag{15}$$

Appendix D Appendix Figures and Tables

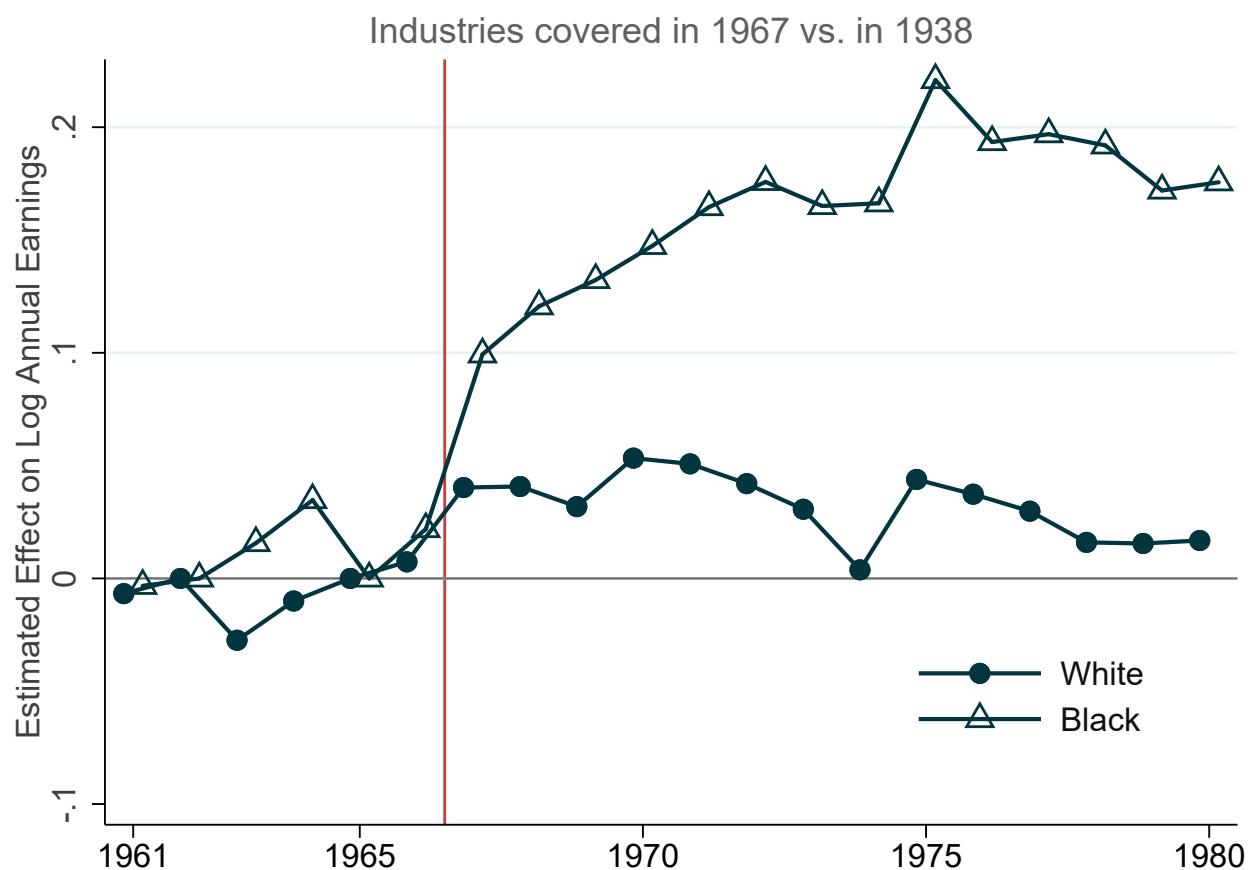
Figure A19: Impact of the 1966 FLSA on annual earnings by race



Source: CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces.

Figure A20: Impact of the 1966 FLSA on annual earnings by race

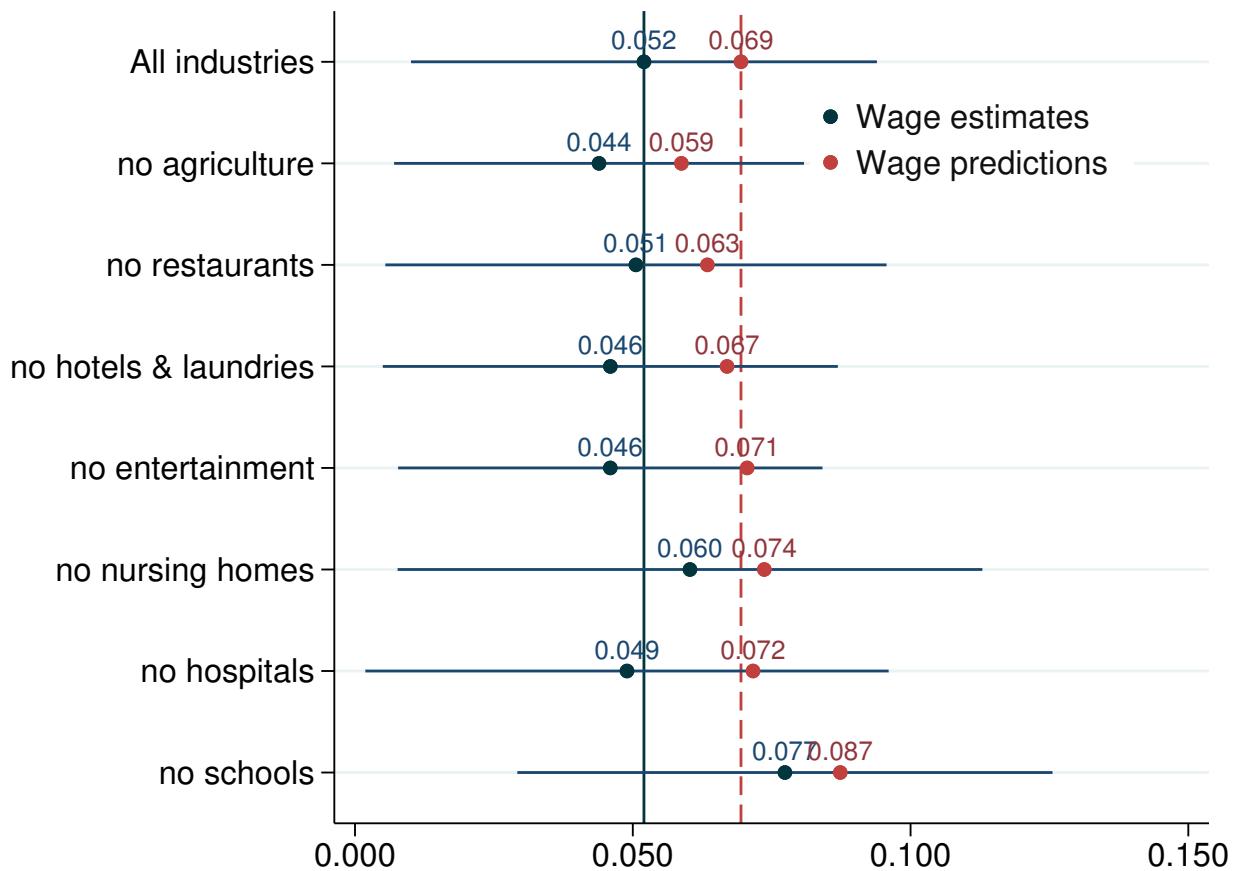


Source: CPS 1962-1980.

Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: This graphs differs from figure 8b: the control group for black workers is composed here by black and white workers in the industries covered in 1938, whereas in figure 8b, the control group for black workers is composed of black workers only in the industries covered in 1938.

Figure A21: Wage estimates and wage predictions, by industry

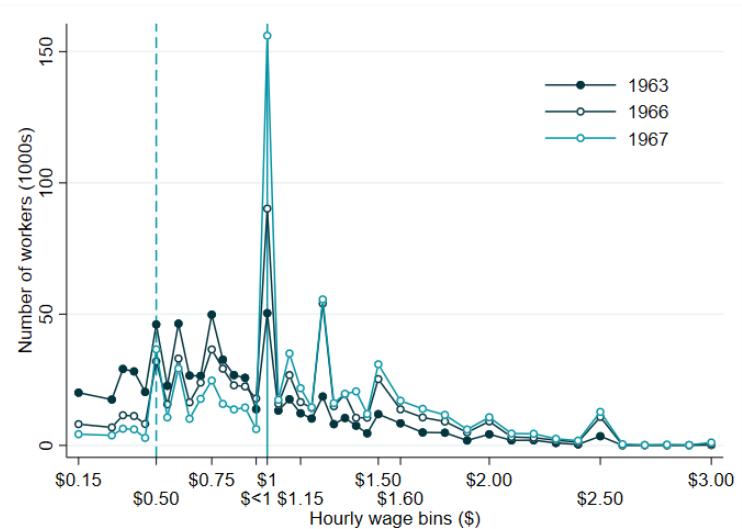


Source: CPS 1962-1980.

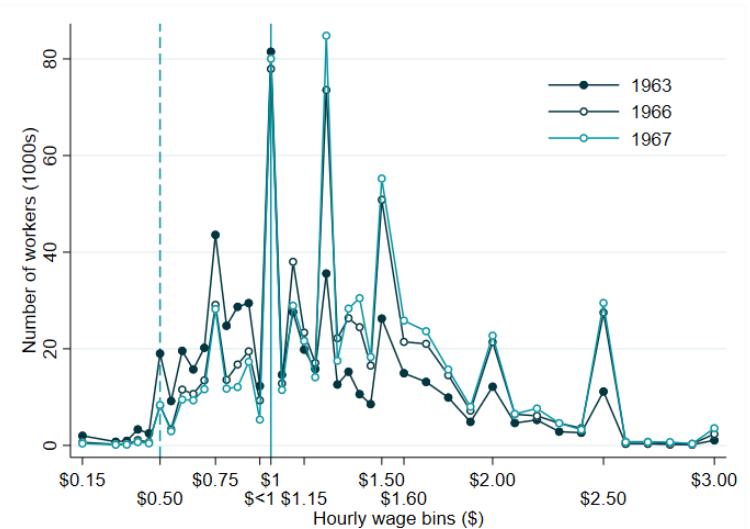
Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Notes: Wage estimates and wage predictions are for 1967.

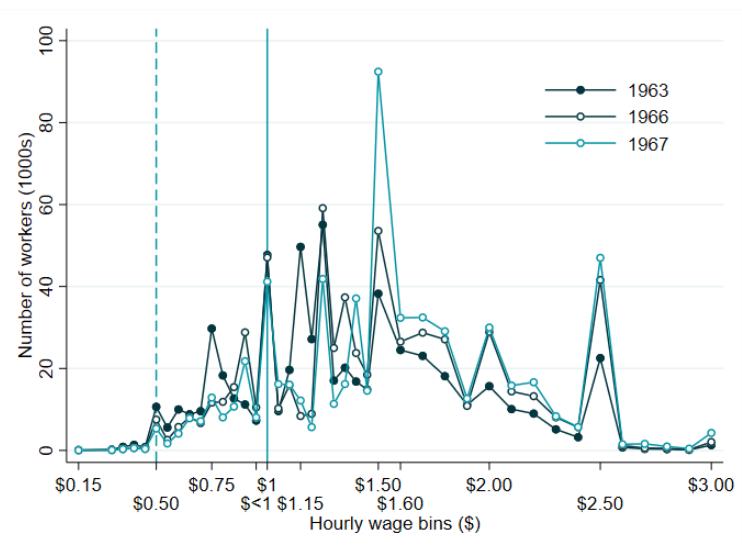
Figure A22: Earnings distributions in hotels, restaurants and laundries, by region



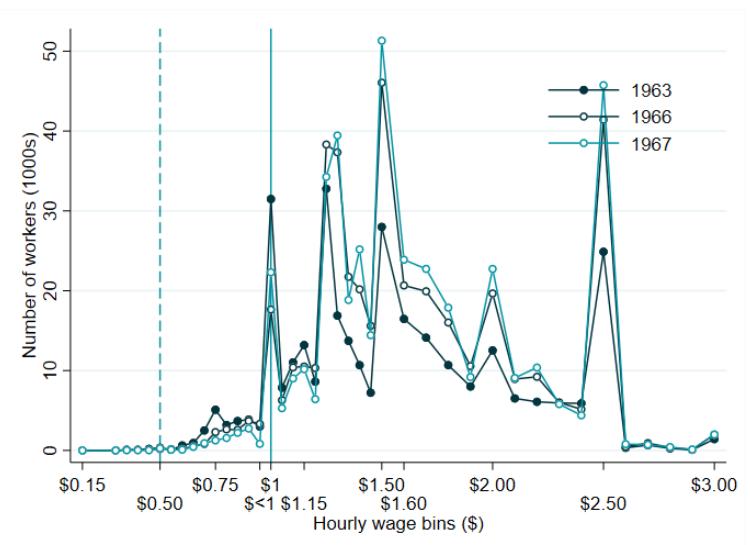
(a) South



(b) Midwest



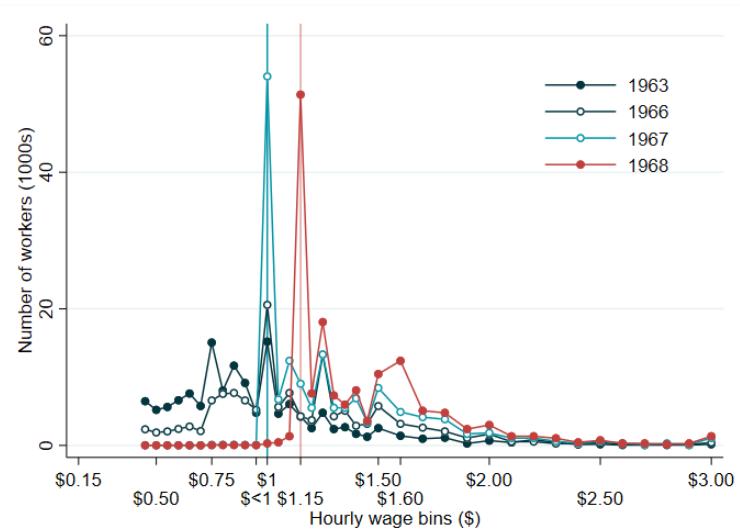
(c) Northeast



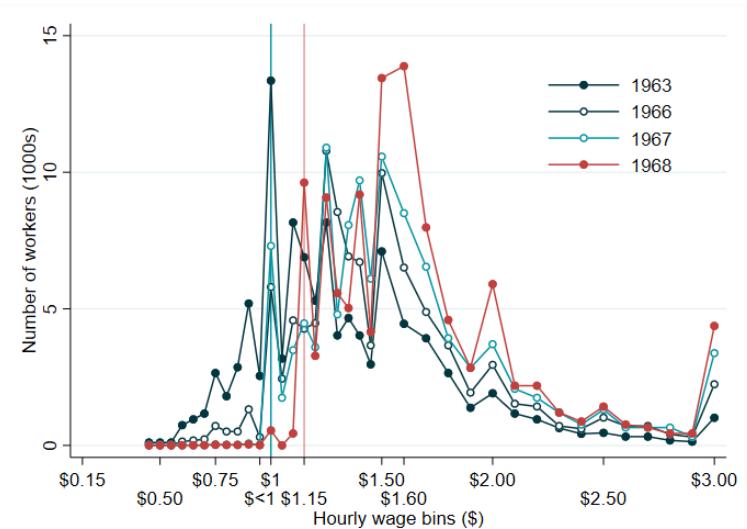
(d) West

Source: BLS Industry Wage Reports. Sample: All nonsupervisory workers in restaurants, and in laundries (except routemen); all nonsupervisory employees in year-round hotels, motels and tourist courts. Notes: The minimum wage is introduced at \$0.50 (dashed line) for tipped workers in hotels and restaurants in 1967. For non-tipped workers, in restaurants, hotels and laundries, the minimum wage is introduced at \$1 (solid line).

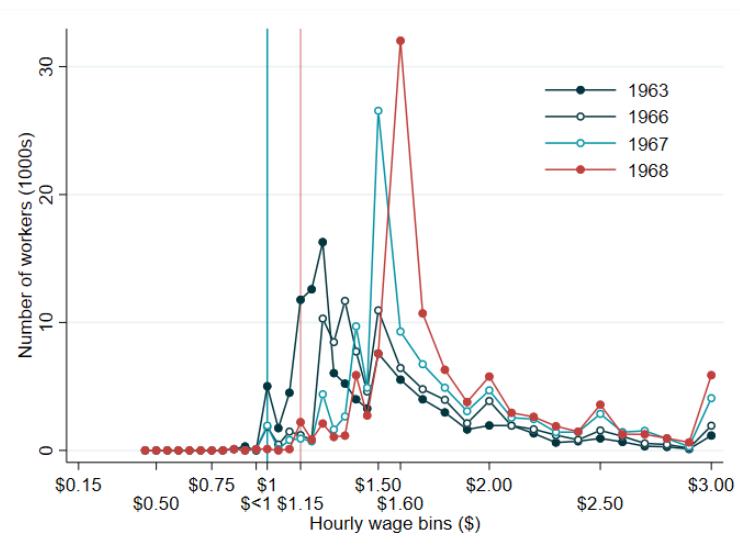
Figure A23: Earnings distributions in laundries (inside plant workers), by region



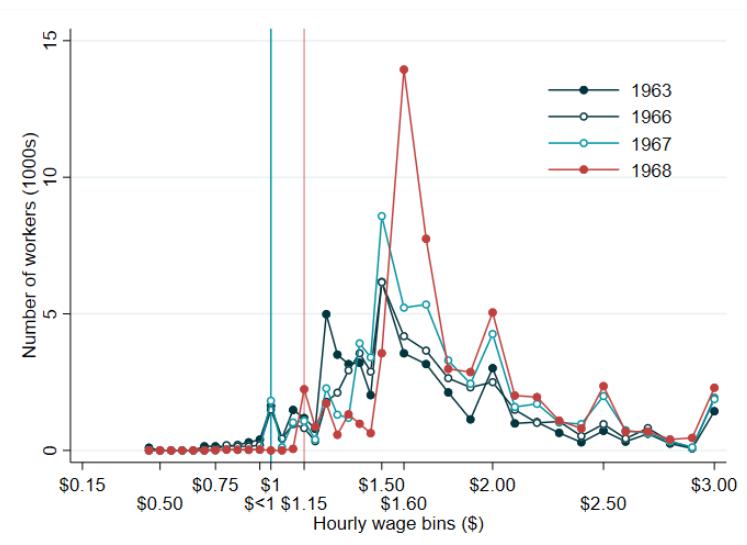
(a) South



(b) Midwest



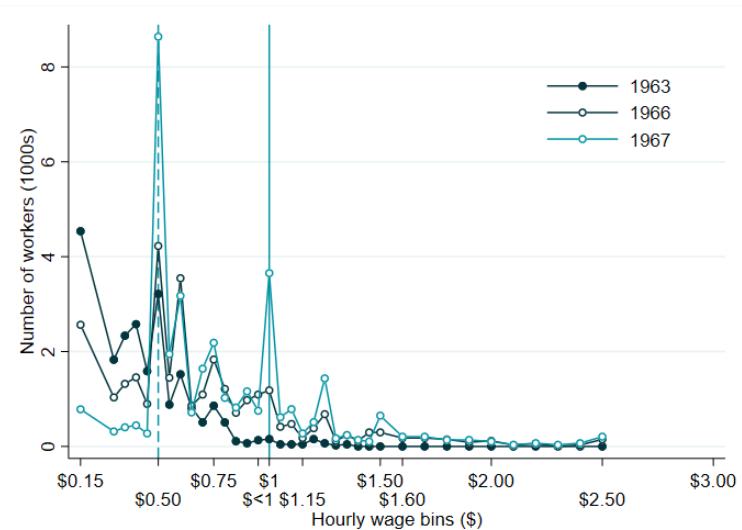
(c) Northeast



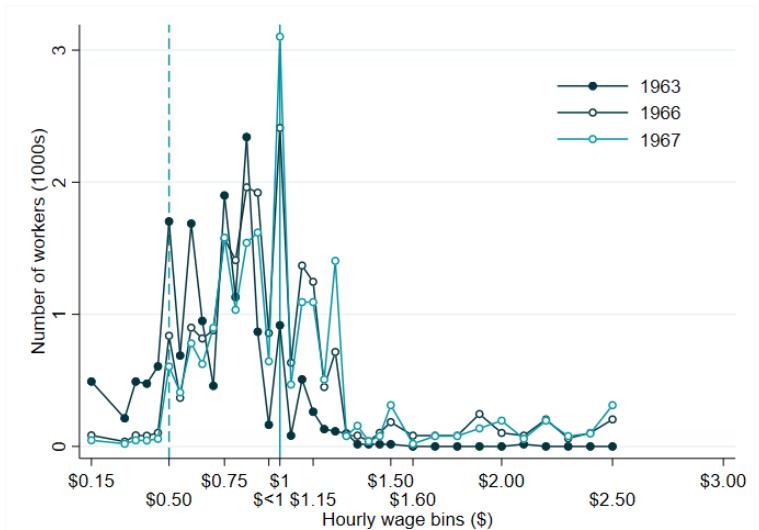
(d) West

Source: BLS Industry Wage Reports. Sample: All inside plant workers in laundries. In laundries, the minimum wage is introduced at \$1 (solid line) in 1967.

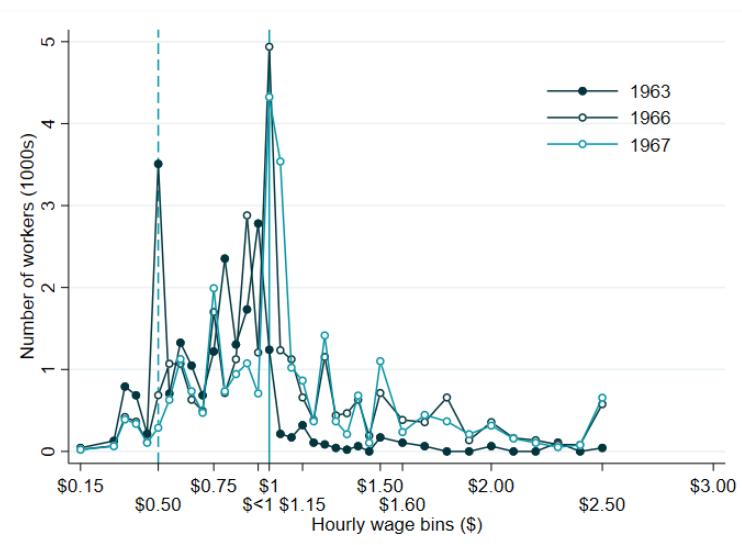
Figure A24: Earnings distributions in hotels (tipped workers), by region



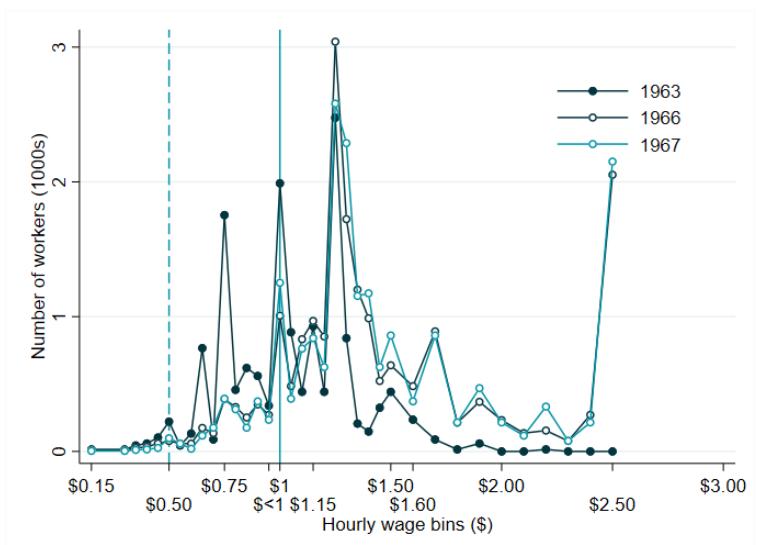
(a) South



(b) Midwest



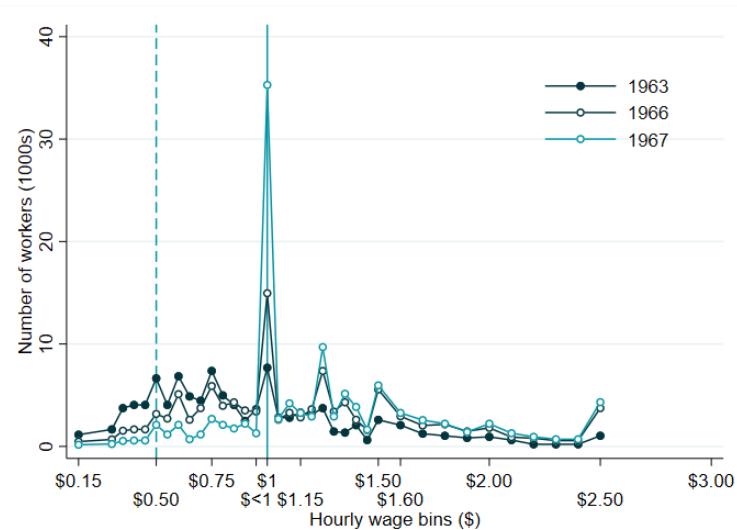
(c) Northeast



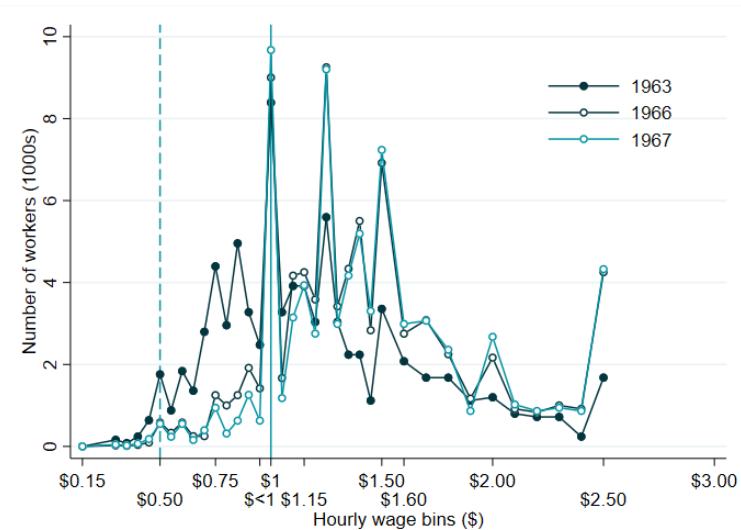
(d) West

Source: BLS Industry Wage Reports. Sample: All nonsupervisory tipped workers in year-round hotels, motels and tourist courts. Notes: The minimum wage is introduced at \$0.50 (dashed line) for tipped workers in hotels and restaurants in 1967.

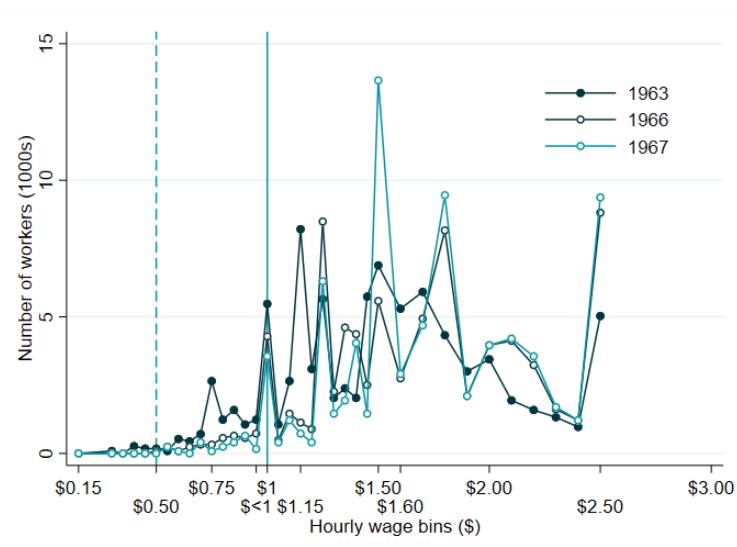
Figure A25: Earnings distributions in hotels (non-tipped workers), by region



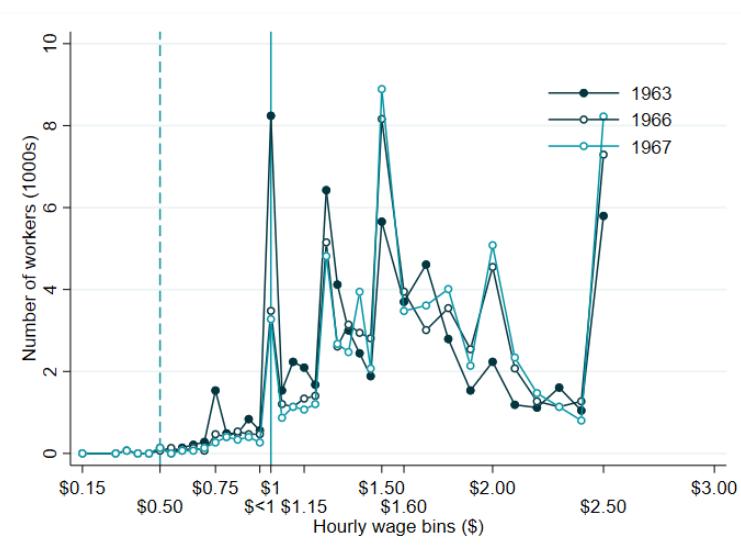
(a) South



(b) Midwest



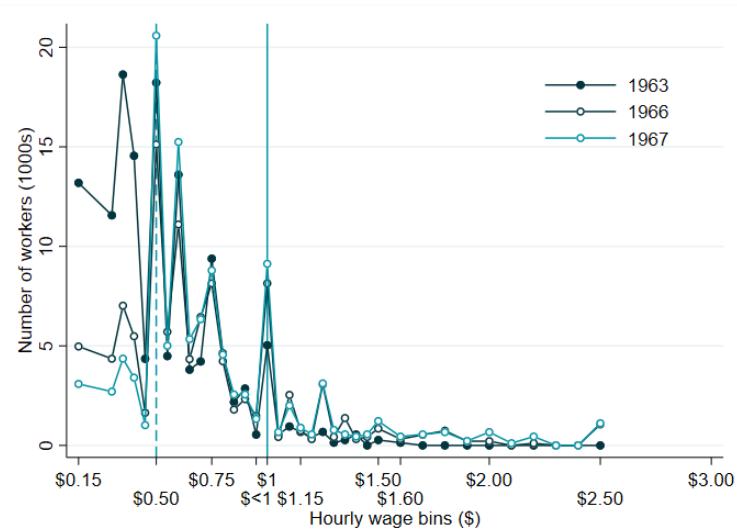
(c) Northeast



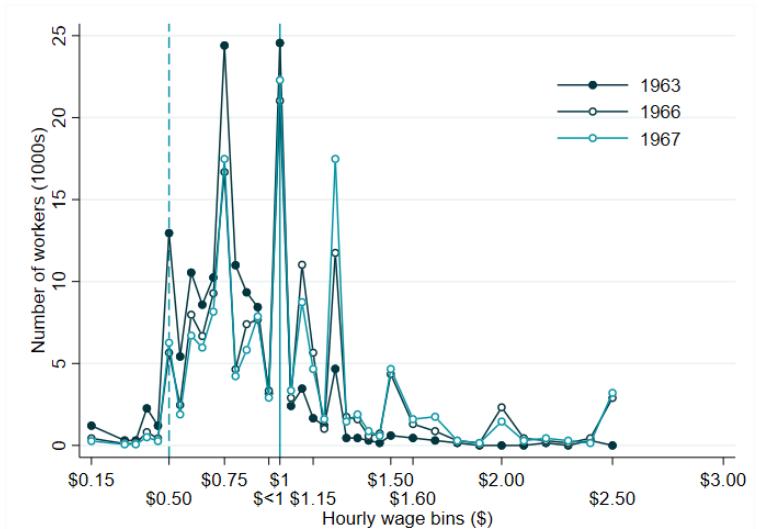
(d) West

Source: BLS Industry Wage Reports. Sample: All nonsupervisory tipped workers in year-round hotels, motels and tourist courts. Notes: The minimum wage is introduced at \$1 (solid line) in 1967 for non-tipped workers.

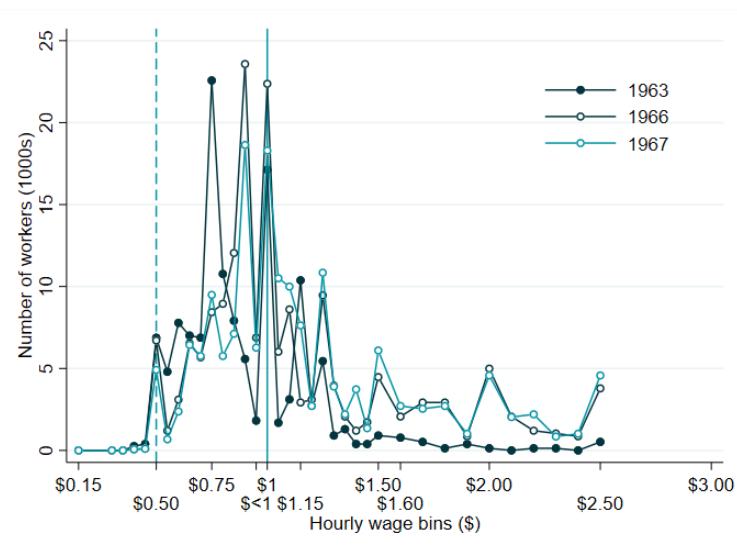
Figure A26: Earnings distributions in restaurants (tipped workers), by region



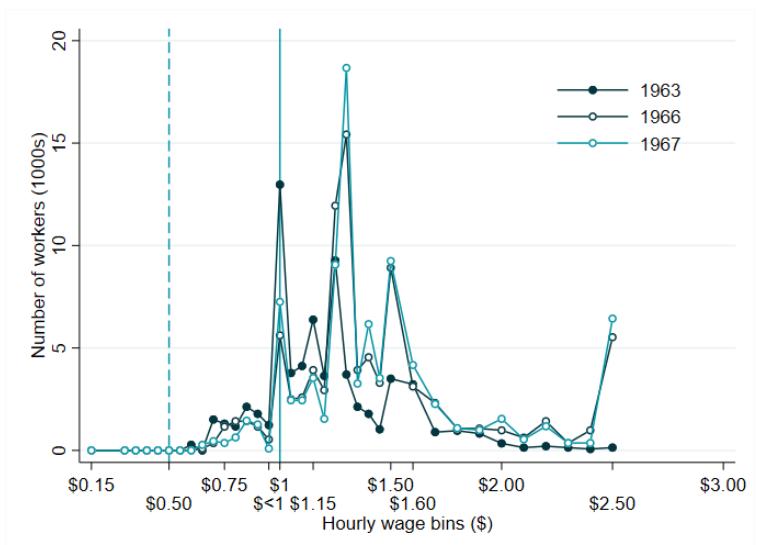
(a) South



(b) Midwest



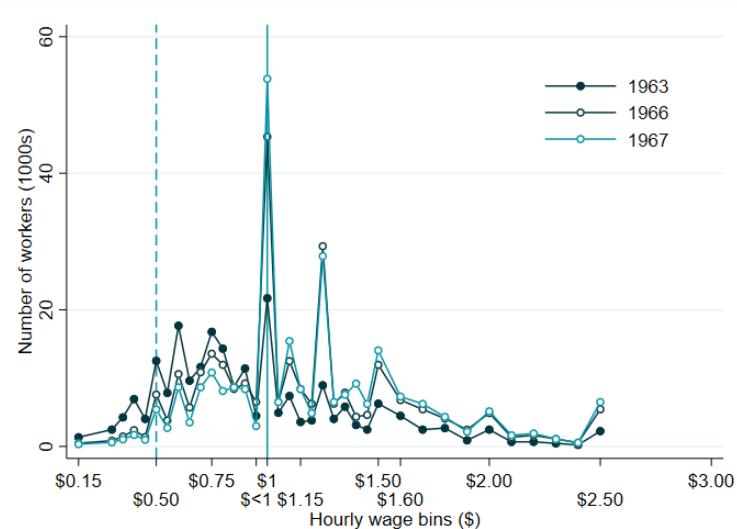
(c) Northeast



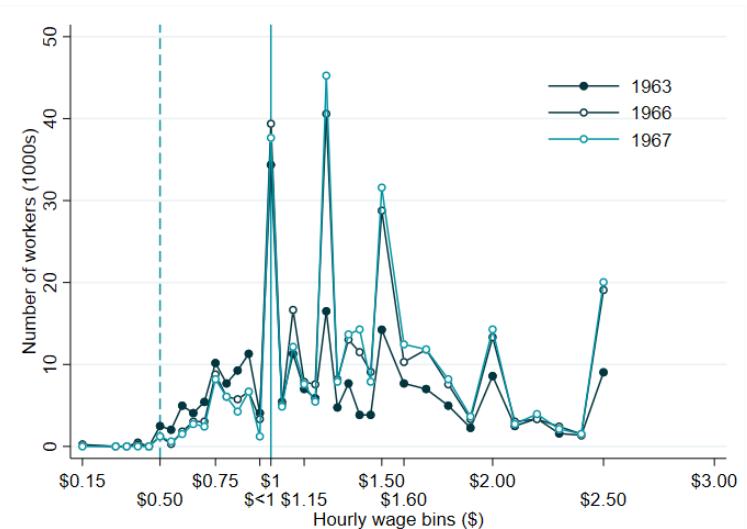
(d) West

Source: BLS Industry Wage Reports. Sample: All nonsupervisory tipped workers in restaurants. Notes: The minimum wage is introduced at \$0.50 (dashed line) for tipped workers in restaurants in 1967. For non-tipped workers, the minimum wage is introduced at \$1 (solid line).

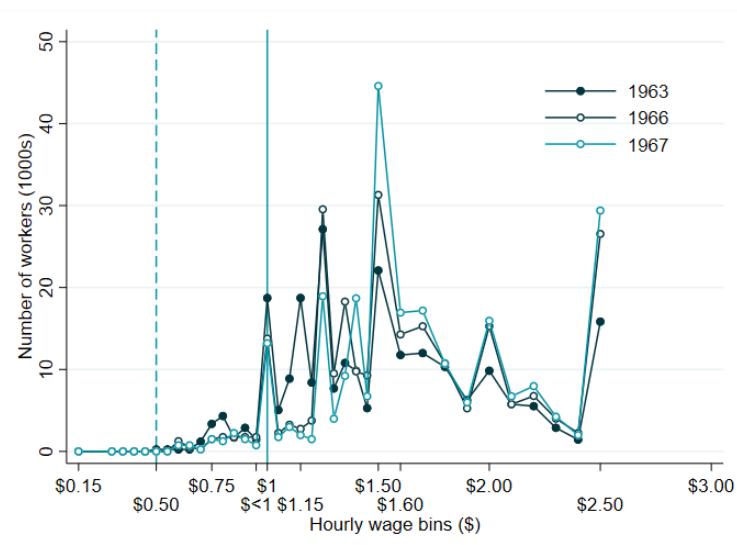
Figure A27: Earnings distributions in restaurants (non-tipped workers), by region



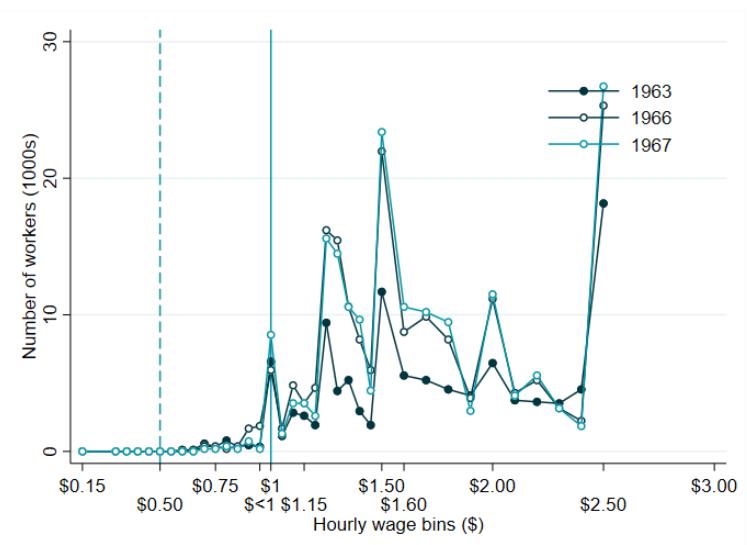
(a) South



(b) Midwest



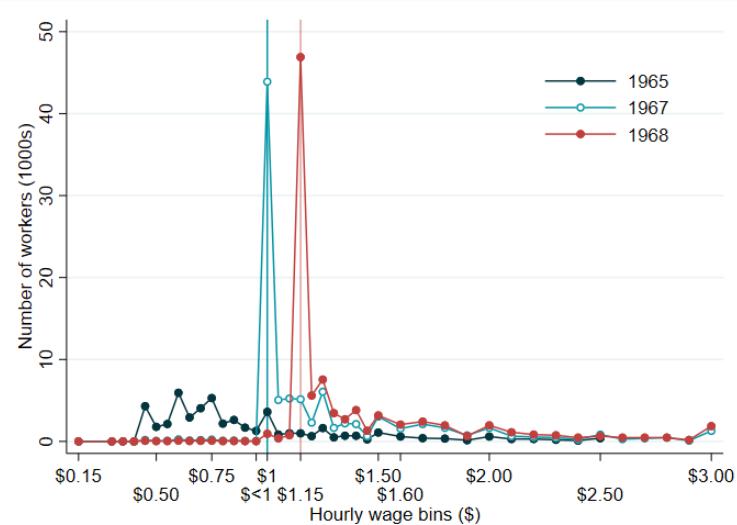
(c) Northeast



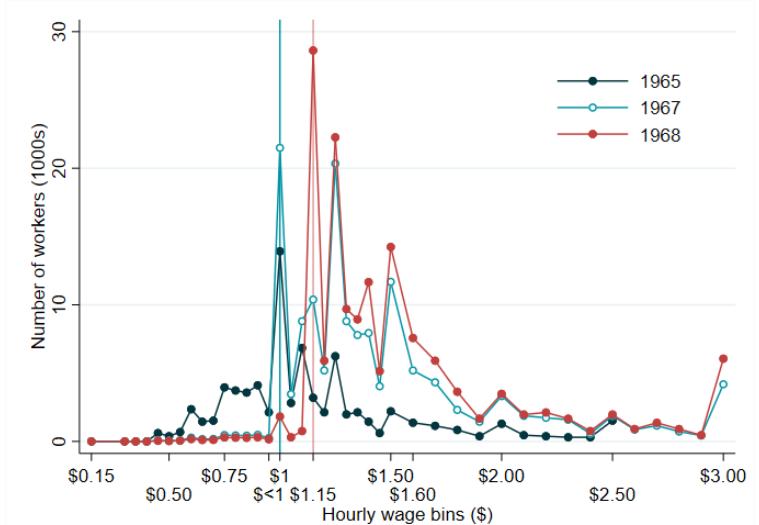
(d) West

Source: BLS Industry Wage Reports. Sample: All nonsupervisory non-tipped workers in restaurants. Notes: The minimum wage is introduced at \$0.50 (dashed line) for tipped workers in restaurants in 1967. For non-tipped workers, the minimum wage is introduced at \$1 (solid line).

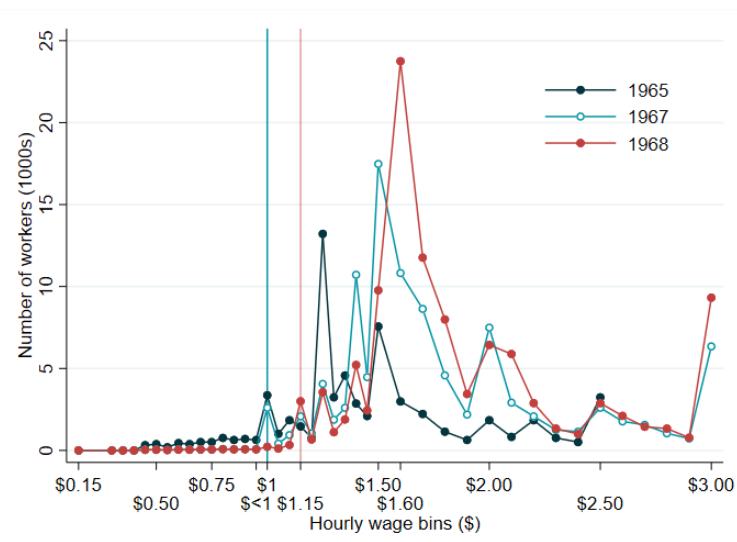
Figure A28: Earnings distributions in nursing homes, by region



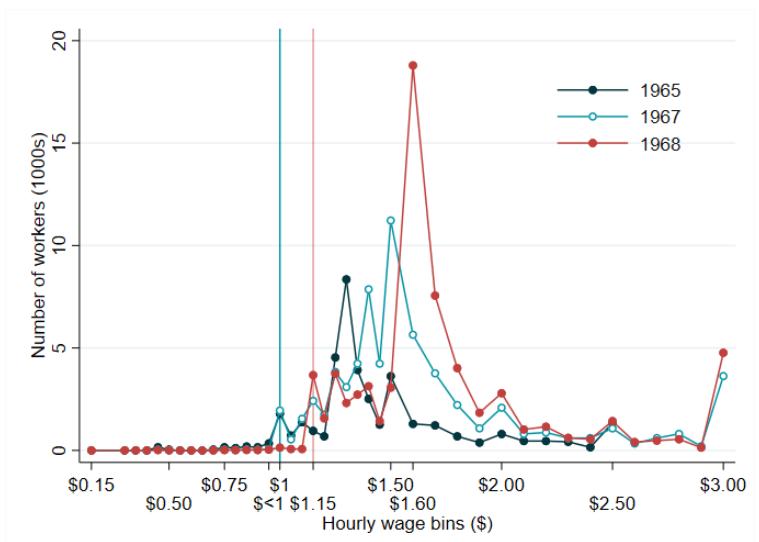
(a) South



(b) Midwest



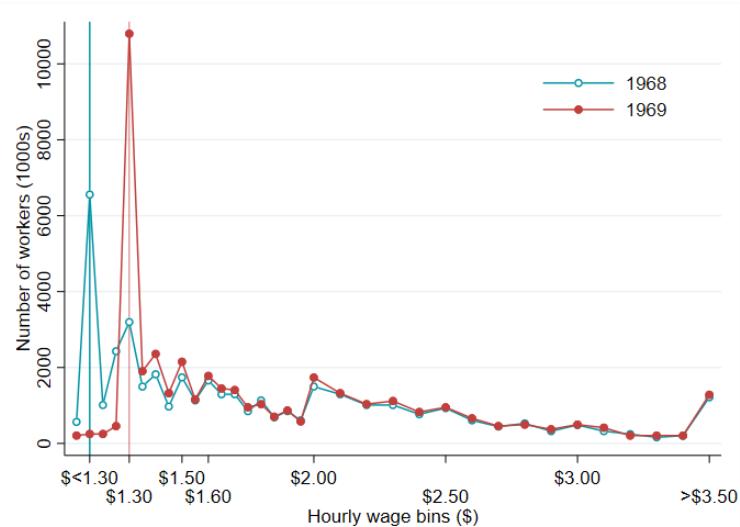
(c) Northeast



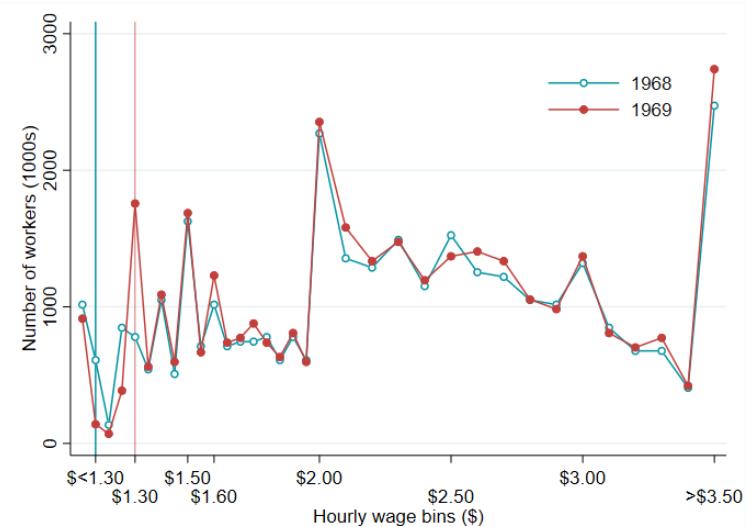
(d) West

Source: BLS Industry Wage Reports. Sample: All nonsupervisory employees in nursing homes and related facilities.

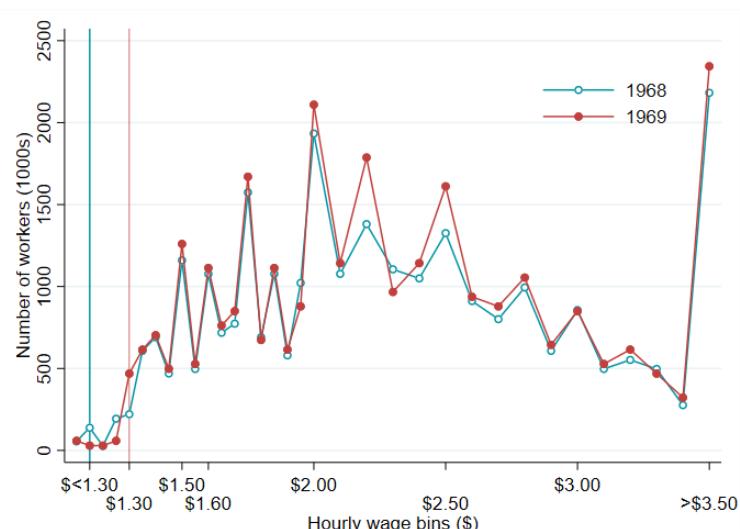
Figure A29: Earnings distributions in schools, by region



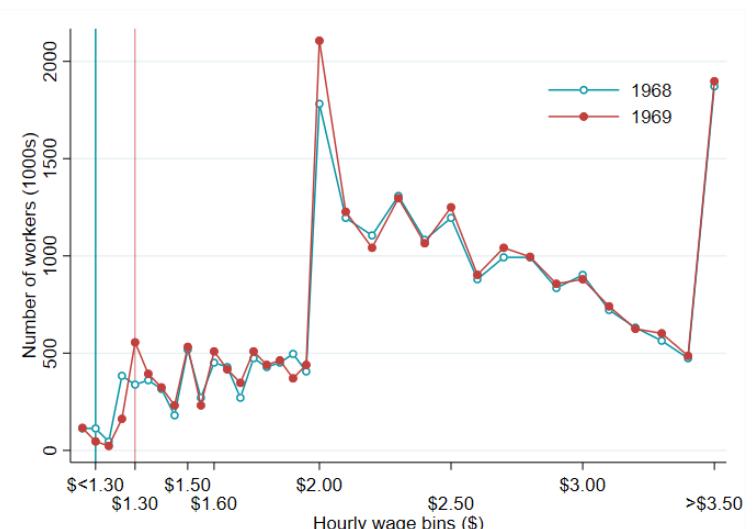
(a) South



(b) Midwest



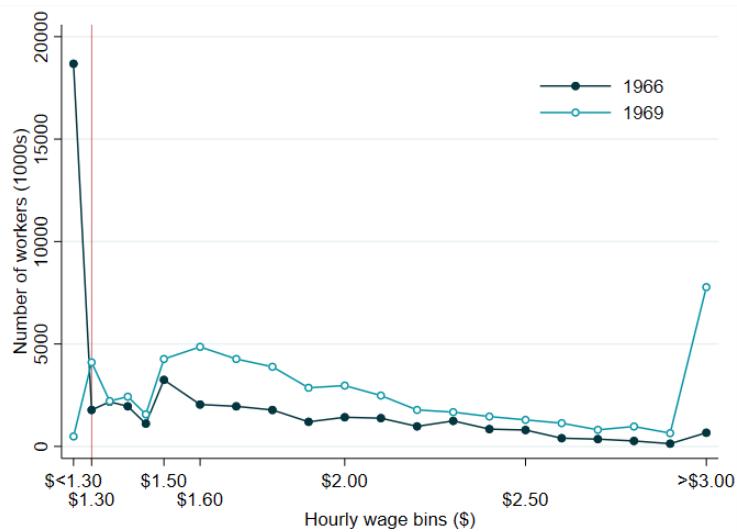
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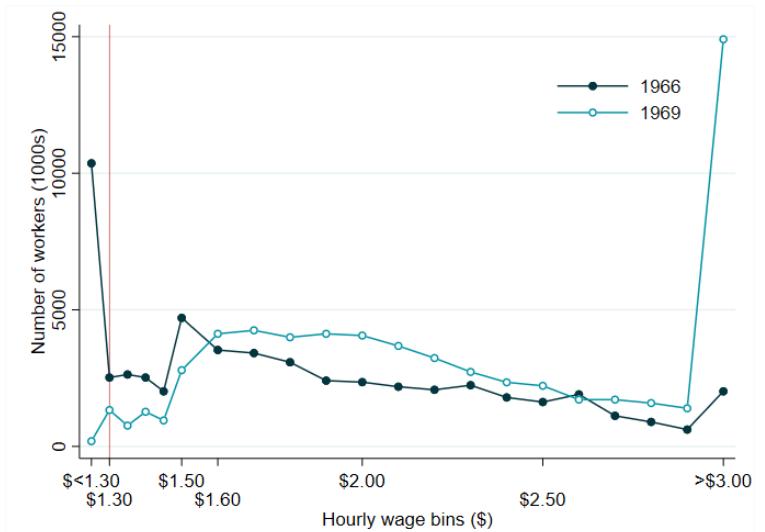
(d) West

Source: BLS Industry Wage Reports. Sample: All nonsupervisory nonteaching employees (i.e. e.g. custodial employees, food service employees, office clerical employees, skilled maintenance employees, bus drivers) in schools.

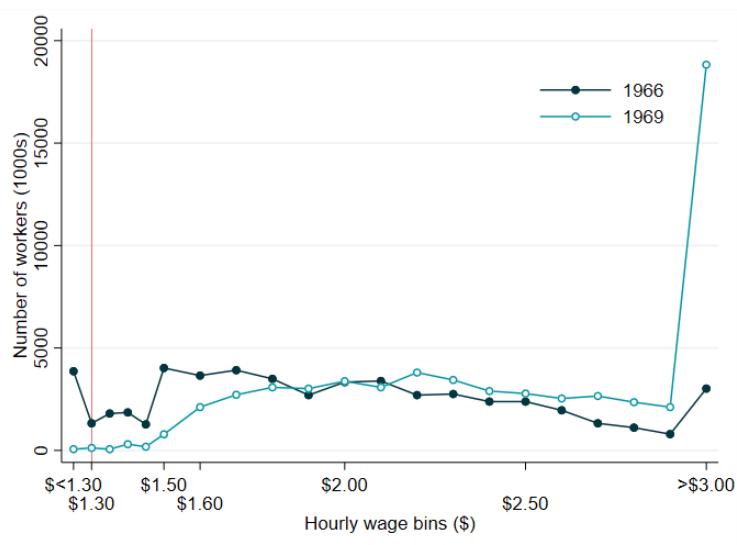
Figure A30: Earnings distributions in hospitals, by region



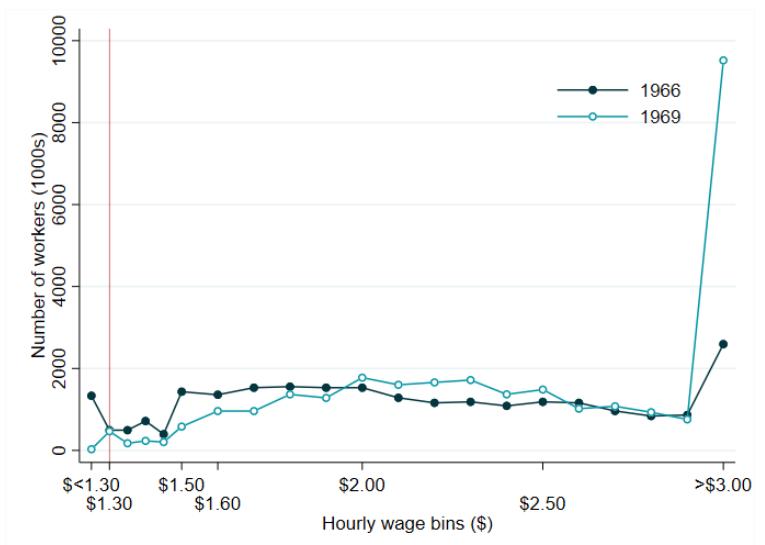
(a) South



(b) Midwest



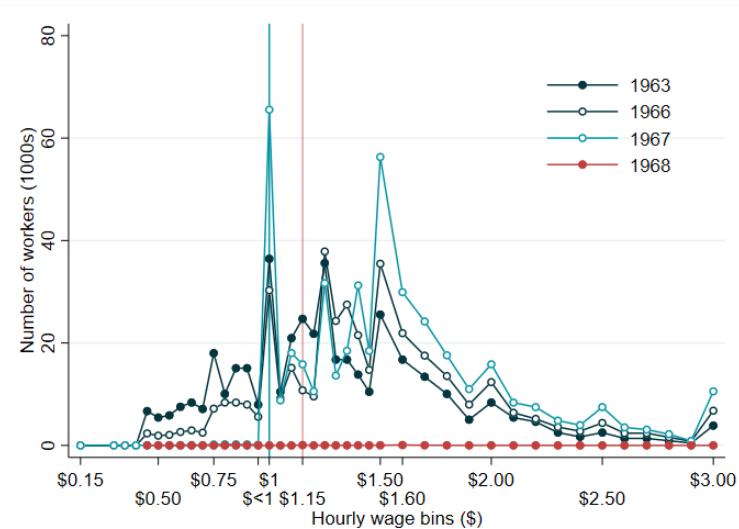
(c) Northeast



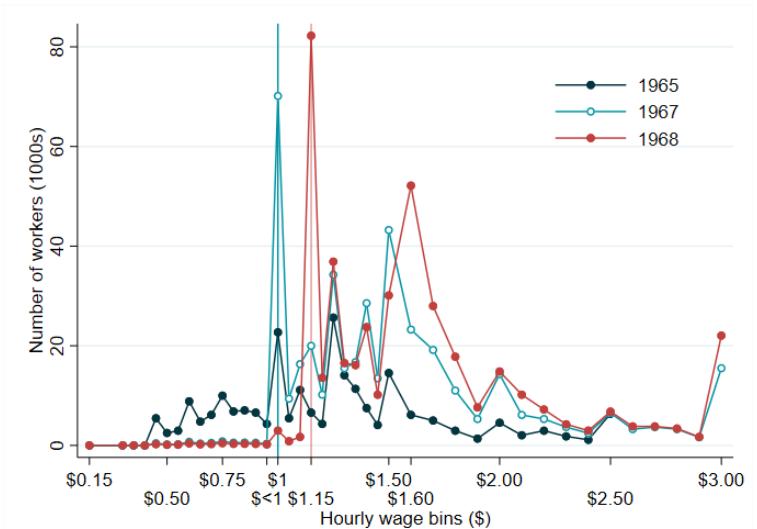
(d) West

Source: BLS Industry Wage Reports. Sample: All nonsupervisory employees in all hospitals (except federal hospitals) (i.e. e.g. nursing aids, porters, maids, kitchen helpers, dishwashers, practical nurses, medical social workers, dietitians, etc.).

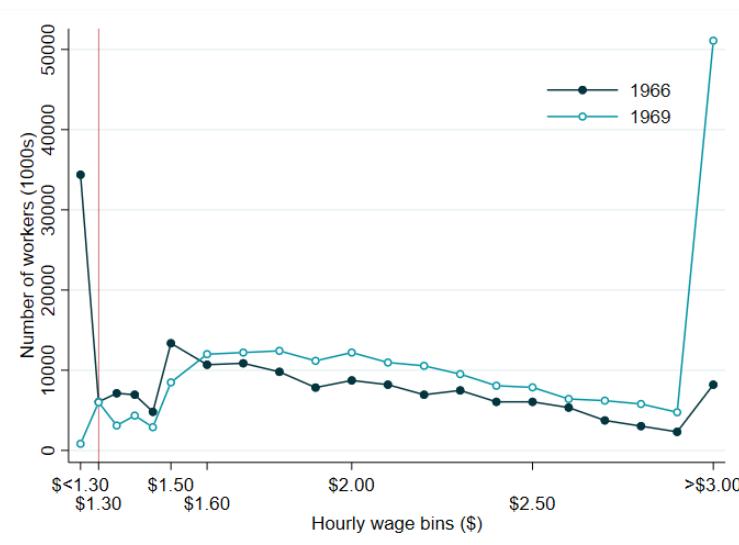
Figure A31: Hourly earnings distributions



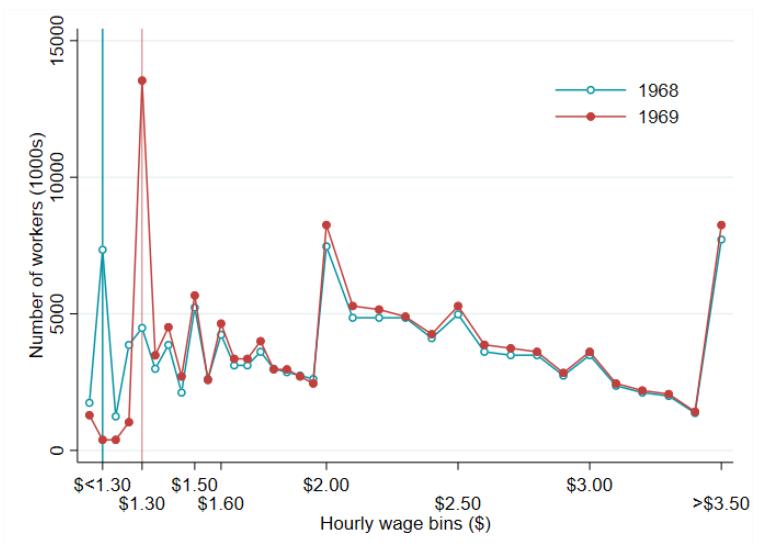
(a) Laundries



(b) Nursing homes



(c) Hospitals

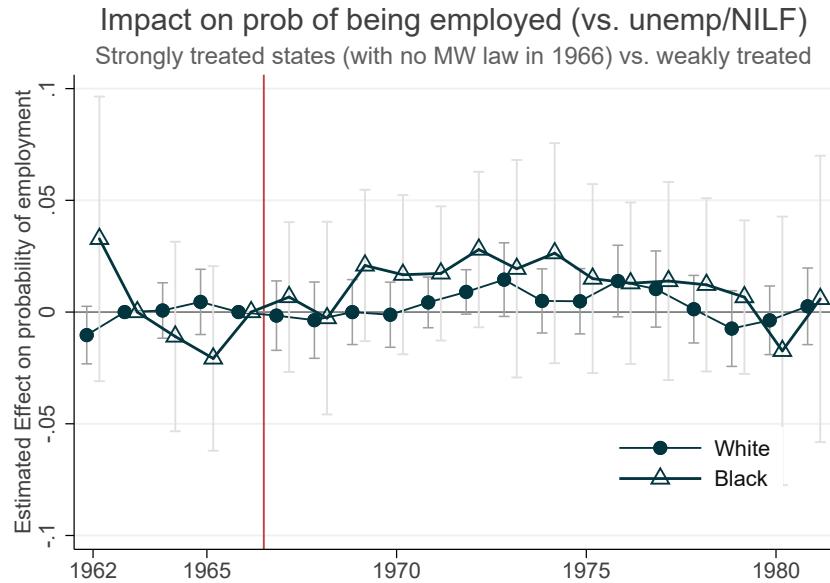


(d) Schools

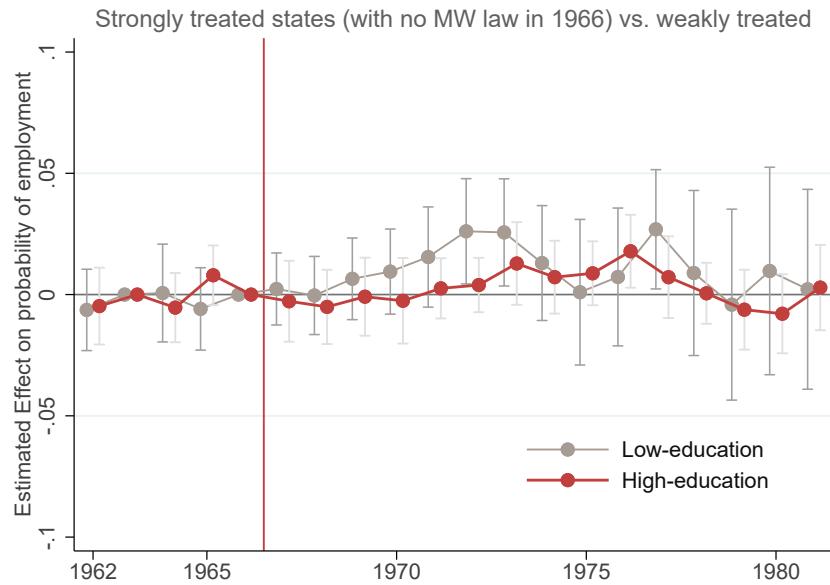
Source: BLS Industry Wage Reports. Sample: All nonsupervisory employees.

Figure A32: Impact of the 1966 FLSA on probability of being employed (vs. not unemployed or not in the labor force)

(a) Black vs. white workers



(b) Low-education vs. high-education

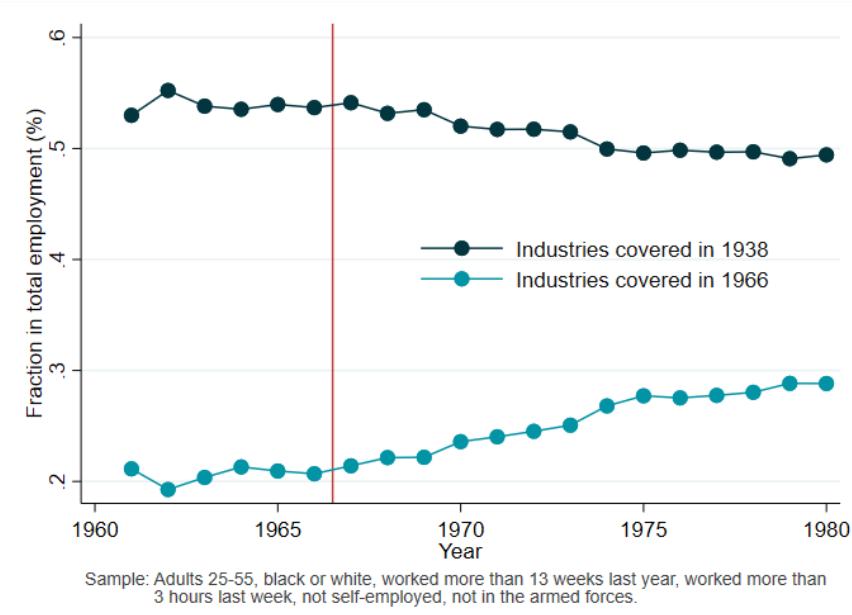


Source: CPS 1962-1980. Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

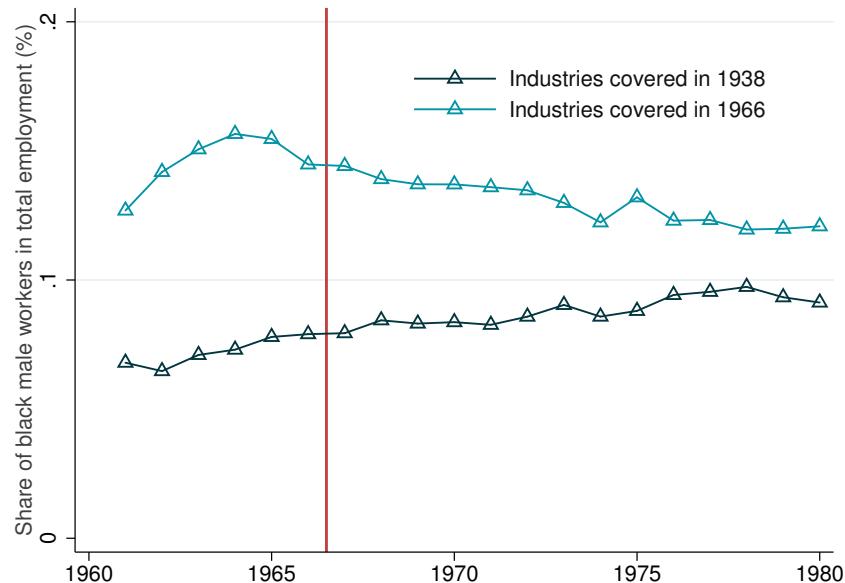
Notes: Standard errors clustered at the industry and state (group) level. Includes state, industry and time fixed effects.

Figure A33: Evolution of Black and White employment in treated and control industries

(a) Employment shares in control vs. treated industries

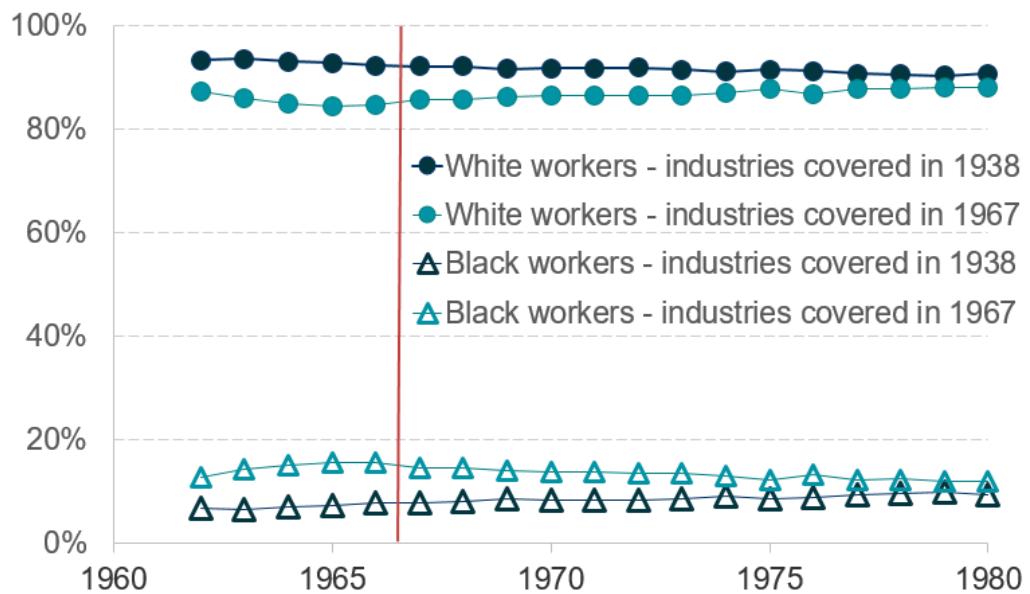


(b) Black (vs. white) employment shares within 1938 and 1967 industries



Source: CPS 1962-1980. Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

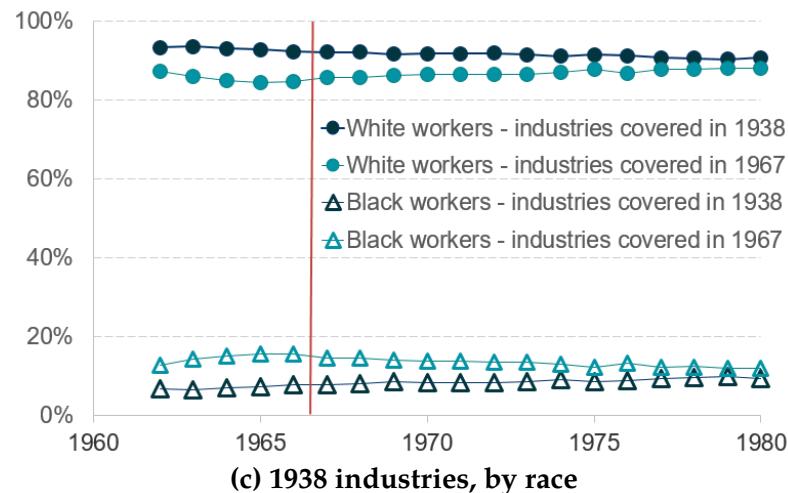
Figure A34: Aggregate employment shares by industry type and by race



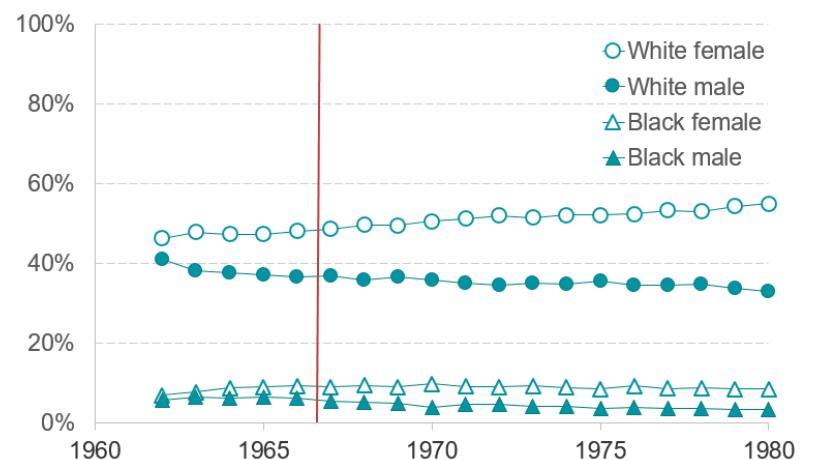
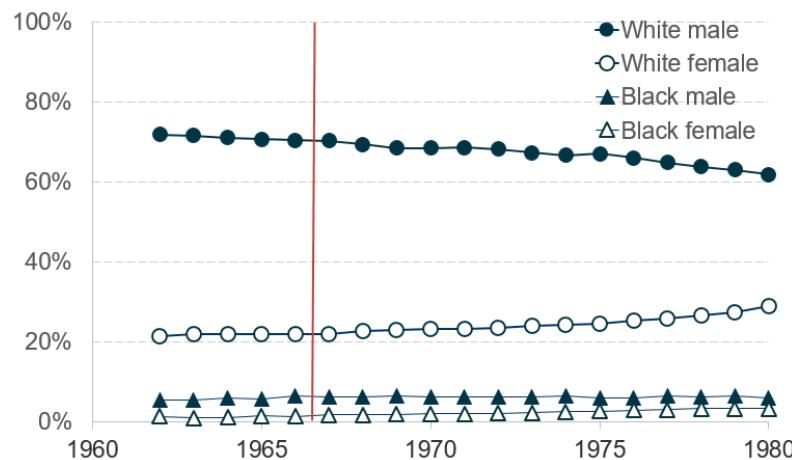
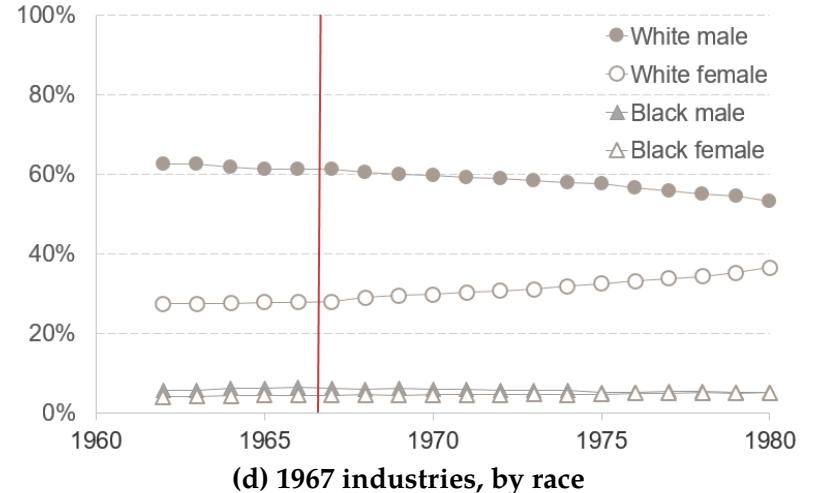
Source: CPS 1962-1980. Sample: Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

Figure A35: Aggregate employment shares

(a) By industry type and by race



(b) All industries, by race

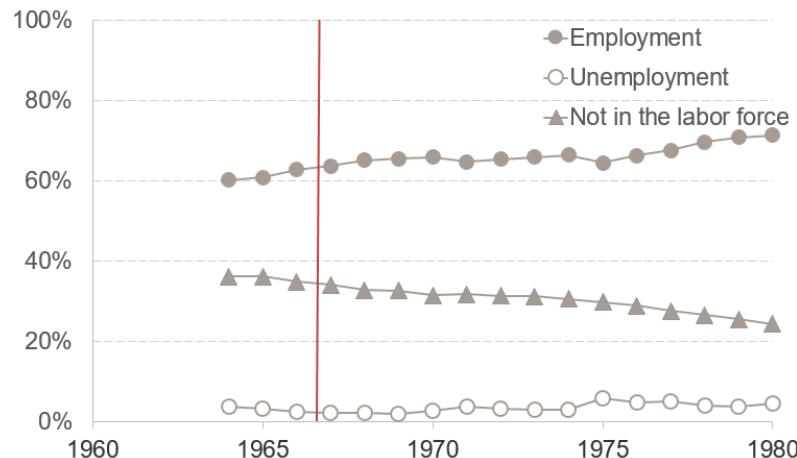


Source: CPS 1962-1980. Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.

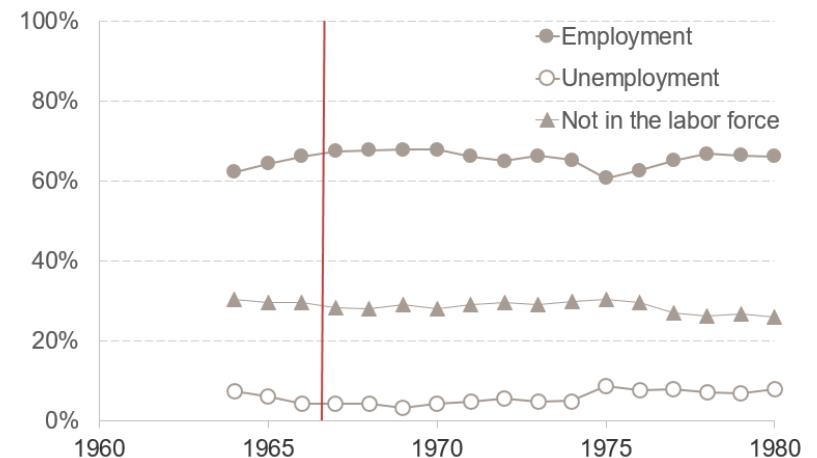
Notes: Standard errors clustered at the industry and state (group) level. Includes state, industry and time fixed effects.

Figure A36: Employment status in 1938 and 1967 industries

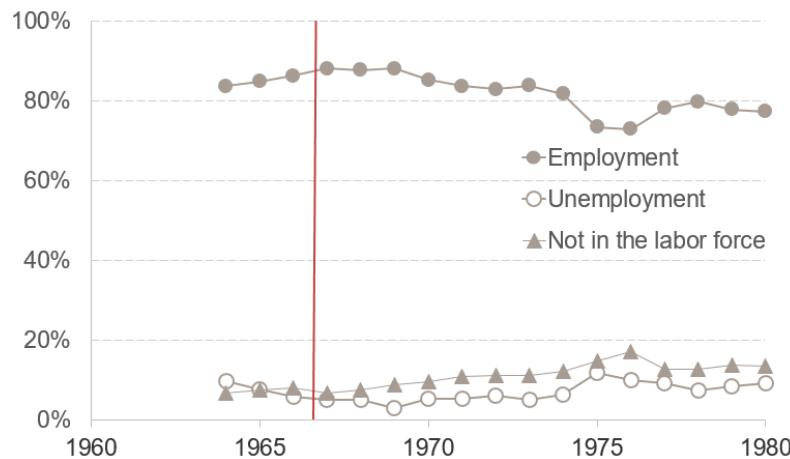
(a) Black and white persons



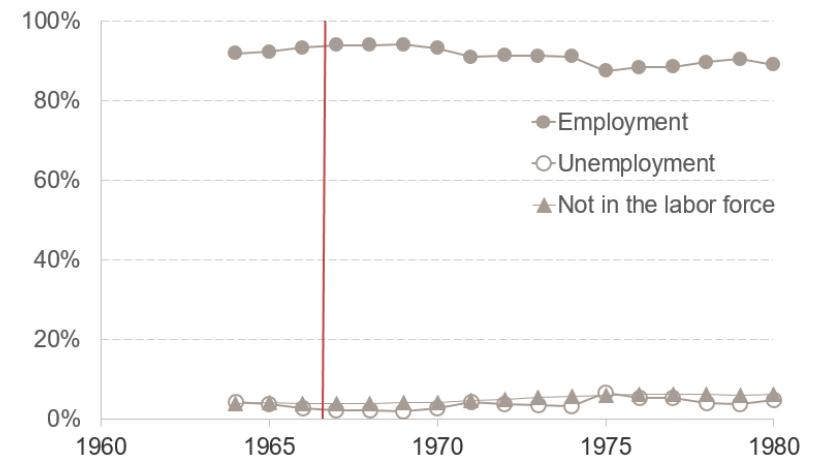
(b) Black persons



(c) Black male persons



(d) White male persons



Source: CPS 1962-1980. Adults 25-55, black or white, worked more than 13 weeks last year, worked more than 3 hours last week, not self-employed, not in the armed forces. Excludes public sector, private households, retail trade and construction.