

Can A Higher Minimum Wage Rate Help Close The Persistent Racial Wage And Earnings Gaps?

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Abstract

In this paper, I estimate the effect of minimum wage increases on the racial wage and earnings gaps between black and white workers in the United States, during the years 2000 to 2004. Using fixed-effects and a state-year trend model, I find that an increase to the minimum wage is associated with a 3.6% increase in black workers' wages, almost double the increase experienced by white men, suggesting a narrowing of the racial wage gap. Conversely, white workers' overall earnings increased by 1.1%, compared to only 0.78% for black workers. This result suggests that the minimum wage does not reduce overall racial economic disparities. I conclude that the overall benefits workers may receive from minimum wage increases are likely to be concentrated among white men.

Introduction

Inequality and racial disparities have been long-standing issues in the United States, but two movements over the past decade have shown a rising consciousness around these issues, along with increasing grassroots activism to address them. Six years ago, the Black Lives Matter movement began (Black, n.d.) and brought with it a changing national discourse regarding inequality between black and white Americans. Just one year earlier the "Fight for \$15" formed as a movement to raise minimum wage rates to a "living wage" (Fight, n.d.). A snapshot of how these two issues intersect can be seen in the following statistics: African Americans make up about 13% of the US population (U.S. Census, n.d.) but they are about 23% of the US population that is poor (Kaiser, 2019). A person working full-time while making the federal minimum wage, \$7.25, will only earn a little more than the poverty level for a single adult (ASPA, n.d.). African American workers are disproportionately impacted by the low minimum wage (Huizar & Gebreselassie, 2016).

This memo explores whether increasing the minimum wage in the early 2000s improved the economic well-being of low-wage workers while reducing racial economic gaps. To answer this question, I tested whether prior state-level minimum wage increases have narrowed the income gap between black and white Americans. I analyzed the differences in income, as measured by hourly wages and weekly earnings, between workers of different races during the period from 2000 to 2004. During this time, the federal government maintained its minimum level at \$5.15 per hour, yet 12 states implemented their own increases, allowing for comparisons at the point of implementation (see figure 1 and table 1).

Figure 1: Map of States that Increased their Effective Minimum Wage, 2000-2004

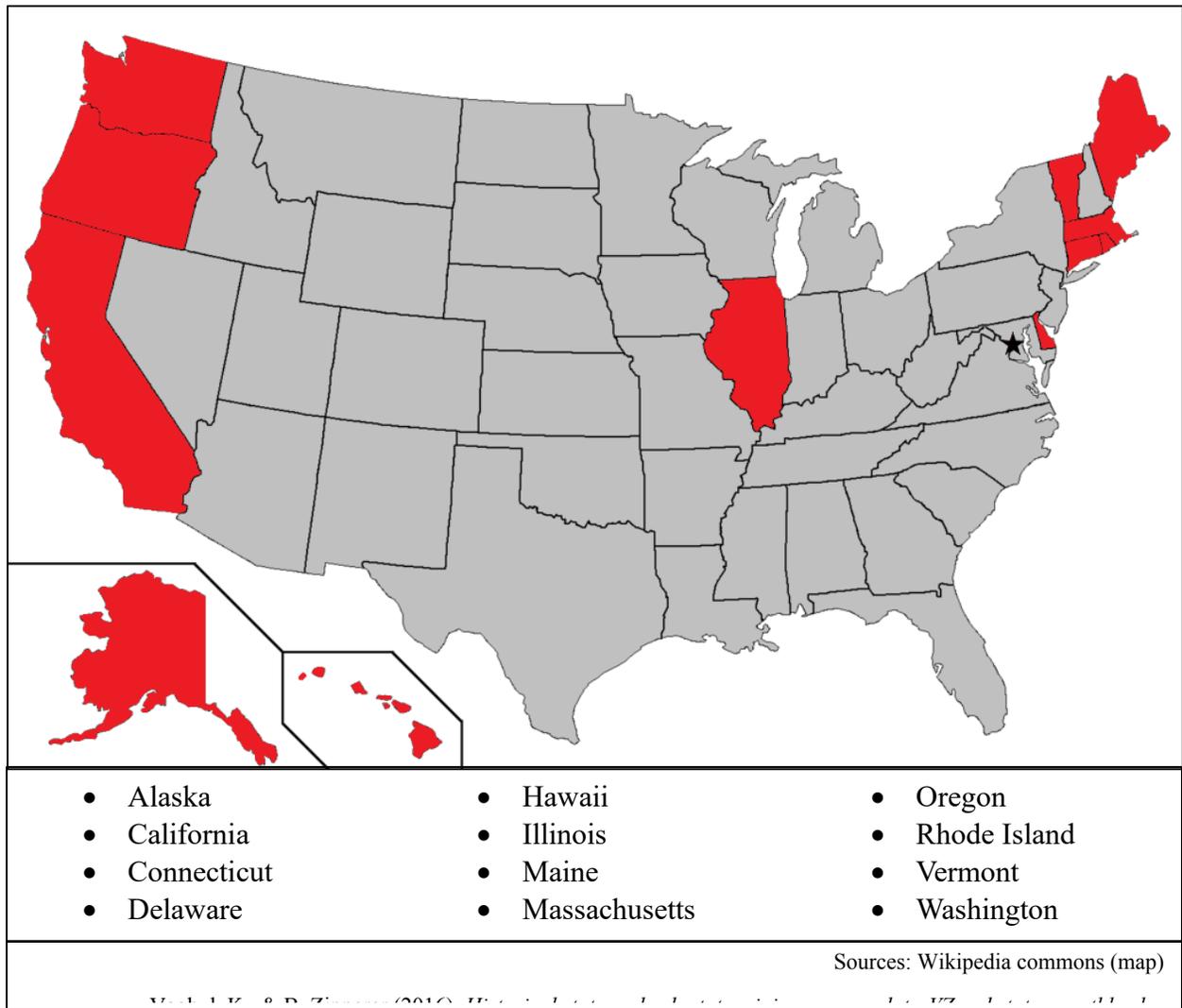


Table 1: Schedule of Effective Minimum Wage Increases for Treatment States, 2000-2004

State	2000	2001	2002	2003	2004	Total Increases
Alaska	—	—	—	\$1.50	—	1
California	—	\$0.50	\$0.50	—	—	2
Connecticut	—	\$0.25	\$0.30	\$0.20	\$0.20	4
Delaware	\$0.50 (October)	—	—	—	—	1
Hawaii	—	—	\$0.50	\$0.50	—	2
Illinois	—	—	—	—	\$0.35	1
Maine	—	—	\$0.60	\$0.50	\$0.10 (October)	3

Massachusetts	—	\$0.75	—	—	—	1
Oregon	—	—	—	\$0.40	\$0.15	2
Rhode Island	\$0.50 (September)	—	—	—	\$0.60	2
Vermont	—	\$0.50	—	—	\$0.50	2
Washington	—	\$0.22	\$0.18	\$0.11	\$0.15	4

Note: All minimum wage increases were enacted in January of each year, unless otherwise noted in parentheses. The bolded cells indicate the first year the state implemented their first increase for the sample period. The minimum wage increases in this table are the nominal, effective increases that each state implemented.

Source: Vaghul and Zipperer (2016)

I hypothesized, first, that the minimum wage increases would decrease the difference in hourly wages between races. If a state increased its minimum wage, it would push wages up at the low end of the income distribution but not directly affect wages above the new minimum. Because black workers generally earn less than white workers (Hernandez et al., 2019), with over half of black workers but only a third of white workers paid less than \$15 per hour, lifting the wage floor could move the wages of black workers closer to where wages are for white workers, at least in the short-term. Second, I hypothesized that minimum wage increases would widen the overall earnings gap through disparate impacts to work hours. If increased wages cause businesses to lower their payroll expenses, they may decide to lower workers' hours or lay-off workers, offsetting workers' increased wages. Those most vulnerable to such staffing decisions will likely be people of color and other historically marginalized populations (Kalev, 2014). Therefore, the costs of government-mandated higher wages will likely be borne by black workers' decreased total earnings.

Using a difference-in-differences methodology, I found evidence to support both of my hypotheses. Wages increased over the sample period for both white and black workers, with whites' wages increasing by a larger percentage by 2004, while accounting for inflation. The implementation, however, is associated with a larger increase to black workers' wages. At the same time, after accounting for inflation and the way that earnings were already trending, white workers experienced a greater positive effect to their overall weekly earnings associated with an increase to the minimum wage than did black workers, expanding the racial earnings gap. I conclude that evidence offers support to both of my hypotheses and that the minimum wage is likely not the best tool for narrowing racial economic gaps. The body of this memo is divided into four sections. Section I offers a background on how the minimum wage and racial wage gap relate. It also surveys current literature on the impact of the minimum wage on workers' employment and their economic outcomes. Section II explains the data and methodology used in this study. Section III of the memo presents my results. Finally, Section IV concludes the paper and reflects on a few policy implications.

Background

Minimum Wage and the Racial Wage Gap

The federal minimum wage was originally established by The Fair Labor Standards Act of 1938 for the "maintenance of the minimum standard of living necessary for health, efficiency, and general well-being of workers" (DOL, n.d.). Over time, the federal minimum level has not kept up with this standard. Originally, the law set the level to \$0.25 per hour (or \$9,040 a year in 2017 dollars; CPI, n.d.). The minimum wage then slowly increased over the years, until it peaked in real terms at \$1.60 per hour in 1968 (\$20,600 a year in 2017 dollars). However, since 1968 the effective rate has been falling. It is currently set at \$7.25 per hour, or about \$15,000 per year (in 2017 dollars) for a full-time worker (Zipperer, 2018).

The current state of the minimum wage is a concern for this study because, as Wilson (2016) explained, "minimum wage laws have a lot to do with patterns in black-white wage inequality at the

lower end of the wage distribution” (p.4), because the proportion of all black workers making minimum wage is larger than the proportion of white workers earning the same. In other words, as the minimum wage has failed to keep up with inflation, its low rate has disproportionately impacted African American workers. In 2016, more than 1 out of 5 African Americans were living in poverty in the U.S., compared to less than 1 out of 10 whites (Gould & Schieder, 2018). This disparity is consistent with the fact that more than half of African Americans make less than \$15 per hour (Huizar & Gebreselassie, 2016), compared to only about 36% of whites (Zillman, 2015).

Dube (2017) found evidence that increasing the minimum wage improved family incomes for those in the bottom 20% of US households, which includes a disproportionate percentage of black families. Similarly, the Economic Policy Institute found that increasing the minimum wage by 10% lowers poverty rates among black and Hispanic Americans (Zipperer, 2018). These two studies indicate that higher minimum wage rates can improve the economic situation of black workers. I used these findings as the basis of my study, to explore how minimum wage increases impact the economic situation of black workers in relation to that of white workers.

The Minimum Wage Debate

While researchers on racial wage differences advocate for raising the minimum wage, minimum wage experts have long debated the minimum wage’s true effect on workers’ overall earnings and on their unemployment rates. Its supporters see it as a tool for ensuring that workers are paid a fair wage for their labor. Its critics, though, view it as an ill-conceived idea that distorts the market, driving up prices for consumers while ultimately harming workers. The arguments have carried over to questions about what sample to use and what methodology to employ. While these debates have not been fully settled, current research has tended toward indicating that minimum wage increases are likely to have no effect or a very slight positive effect for the average low-wage worker, though the most vulnerable among them may be the ones bearing the brunt of any negative effects.

In 2015 and 2016, the city of Seattle enacted two minimum wage increases, first from \$9.47 to \$11 per hour, then from \$11 to \$13 per hour. Jardim et al. (2017) and Reich, Allegretto, and Godoey (2017) both used synthetic controls to analyze the impact of these increases on the city’s workers, yet their results differed. Jardim et al. (2017) used a sample of all low-wage workers and found that the first increase had no real impact on their earnings. The second increase, though, did: low-wage workers experienced a 6.6% decrease in their income. Reich, Allegretto, and Godoey, on the other hand, limited their research to the food service industry, since it “is an intense user of minimum wage workers,” arguing that “if wage and employment effects occur, they should be detectable in this industry” (2017, 2). In contrast to Jardim et al.’s findings, Reich, Allegretto, and Godoey found that the minimum wage increases had a positive effect on wages and no effect on employment levels. The two studies’ contrasting results are reconciled if one considers that while the minimum wage positively impacted restaurant workers, other industries experienced greater negative effects.

Just one year later, though, Jardim et al. (2018) revisited their study. This time they used a difference-in-differences-in-differences approach. Their new study revealed two interesting insights. First, they found that Seattle’s low-wage workers experienced “Ashenfelter dips” just before the first minimum wage increase. These dips are unexpected declines in the variable of interest shortly before a treatment goes into effect, leading to misleading results by overstating the effect size (Ashenfelter, 1978). Second, contrary to their previous study, they found that low-wage workers experienced a slight benefit to their overall earnings from mandated increases.

Neumark, Schweitzer, and Wascher (2004) also studied the impact of minimum wage increases on all low-wage workers, though they used a national sample spanning from 1979 through 1997. Similar to Jardim et al.’s results, Neumark, Schweitzer, and Wascher found that workers may have experienced some boost to their earnings in the short-term; however, within two years those gains were erased. They also found that in the first year there was a negative impact to low-wage employment levels. The authors balanced their findings by theorizing that “employers [were] first laying off part-time workers, reducing fixed costs of labor, and then later adjusting hours downward” (p.443). Therefore, the target population,

low-wage workers, were ultimately harmed by the increases. It is important to note, though, that Neumark, Schweitzer, and Wascher's study relied heavily on lagged effects, an approach not taken in my study.

Dube, Lester, and Reich (2010) took a completely unique approach to answering the question of minimum wage effects by using a cross-border methodology. Looking at other research from the field, the authors contended that previous methods produced unreliable results. Instead, they claimed that their method, matching counties from states who had increased their minimum wage at least once with bordering counties from states that did not, eliminated "spurious negative effects due to spatial heterogeneity...and omitted variable bias" (p. 945). Utilizing this cross-state discontinuity design, the authors analyzed the impact of higher minimum wages on restaurant workers nationwide. Their results showed a positive impact on workers' wages, while not detecting any cost to job numbers. The Dube, Lester, and Reich approach is a very compelling one as it is more able to compare workers who are closer to being equal in expectation and should be explored further. Unfortunately, the scope of this paper does not allow for a similar strategy.

Data and Methodology

The Data

My data is from the Current Population Survey (CPS) conducted by the Census Bureau (Flood et al., 2018). I used monthly data from the years 2000 through 2004, resulting in 60 units of time. One of the benefits of this time period is the stability in the federal minimum wage, at \$5.15 per hour, contrasted by several states increasing the minimum wage rates for their residents. During this five-year period there were two cities, San Francisco and Santa Fe, that raised their minimum wage above their state levels in 2004. Because I was focusing on the minimum wage at the state-level, I did not include their new minimum wage level, instead coding them according to their state's rate.

I limited the sample to only non-Hispanic white and non-Hispanic black men, following the data selection of much of the literature on racial wage gaps, such as Beyer and Charles (2018) and Chandra (2003). I further limited my sample to adult men without a bachelor's degree or higher. The reasoning behind this is that people who do not have bachelor's degrees tend to work in lower paying jobs than those with advanced degrees (Torpey, 2018; Ross and Bateman, 2019). Additionally, I restricted my sample to only civilians and eliminated the self-employed or unpaid family workers. Finally, I adjusted all wage and earnings data to 2004 dollars to account for inflation.

Minimum Wage Laws

During the years 2000 through 2004, the federal minimum wage was set at \$5.15 per hour and had been at that level since the second half of 1997 (DOL, n.d.). At the same time, though, states were able to set their own minimums. However, if the state's rate was set below the federal level then the federal rate was the effective rate for the state. For example, in 2000 Kansas had their minimum wage rate set at \$2.65 (DOL, n.d.). Because it was below the federal standard, workers in Kansas earned at least the federal rate of \$5.15. Thus, Kansas' nominal minimum was \$2.65 but its effective minimum was \$5.15. During the period being examined in this study, there were 12 states that increased their effective minimum wage: Alaska, California, Connecticut, Delaware, Hawaii, Illinois, Maine, Massachusetts, Oregon, Rhode Island, Vermont, and Washington (Vaghul & Zipperer, 2016). These states are considered treated states, because they received the "treatment" of at least one minimum wage increase (see Figure 1 for a map of the treated states). My study is centered around the impact of just the first minimum wage increase on workers' wages and earnings in each. Connecticut and Massachusetts entered the sample period with a new minimum wage rate, having raised theirs in January 2000, but because the sample also starts with January 2000, their new rate did not constitute a change during the study period and so was not considered a "first increase."

The remaining states are ones that did not raise their effective minimum wage during the time period of 2000 through 2004. Because they did not receive the "treatment" of a minimum wage increase, they acted

as my control group. All of the control states had effective minimum wages equal to the federal level, except for the District of Columbia (DC). Although DC had a minimum wage level that was above the federal level, it is still considered part of the control group because it did not change its minimum during the sampled time period.

Descriptive Statistics

The descriptive statistics in Table 2 offer a look at the differences between the treatment and control groups. States were divided into two categories: those who increased their minimum wages at some point between 2000 and 2004 (the treatment group), and those who did not (the control group). The median population for the control group (5.5 million) was higher than in the treatment group (3.6 million). The group of control states also had a higher median GDP and a lower median unemployment rate. In other words, on average, the control states had more people living in them and a better performing economy than the treated states.

Tables 3a and b reflect how earned income changed over time, from 2000 to 2004. For the control states, both white and black working men's hours at their primary jobs decreased by almost the same amount, 1.4% and 1.5% respectively, from 2000 to 2004. The hourly wages for men of both races increased over the same time period, again by around the same rate. The weekly racial earnings gap between the two groups of men, though, expanded by 0.7 percentage points from 2000 to 2004.

For states that enacted minimum wage increases the result was similar — a larger racial earnings gap at the end of the sample period — but the effect was larger. For men in these states, the earnings gap was driven by disparate effects on both hours worked and hourly wages. Both sets of men experienced reductions in their weekly work hours, but black men's hours were cut by more. At the same time, white and black men, on average, were paid more in 2004 than they were in 2000, even when adjusted for inflation; but wages grew by a larger percentage of their previous pay for white men, about 2.5%, compared to 1.7% for black men. Ultimately, the difference in earnings between white and black men increased by 0.9 percentage points. My first hypothesis, regarding the racial wage gap, is not supported by these statistics, but my hypothesis regarding the racial earnings wage potentially is.

Finally, the labor force participation rates from 2000 to 2004 dropped more for black men than for white men, and more for men in treated states than in control states. Among white men in states that did not change their effective minimum wage rate, participation rates in the labor market dropped 1.88 percentage points from 2000 to 2004. In the states that enacted a minimum wage increase, their rates dropped by 2.57 percentage points. Among black men, the cut to their labor force participation was deeper. In the control states, 2.18 percentage fewer men were active in the labor force at the end of the sample period. In the treated states, their active labor force lost 4.16 percentage points. These disparate changes over time reflect the points made by Beyer and Charles (2018) and Chandra (2003), that black men are more negatively affected by changes in the labor market.

Methodology

One of the biggest challenges that my data presents is that the minimum wage increases do not all occur at the same time. Therefore, I had to find a model that could account for the staggered implementation. I used a model similar to the one used by Anderson, Crost, and Rees (2014) in their analysis of the effect of Kansas wet laws on violent crime, in which their data also had implementations that varied across time and location.

To estimate the relationship between minimum wage implementation and wages I used the following difference-in-differences model:

$$\ln(\text{wage})_{ist} = \beta_0 + \beta_1 \text{Implemented}_{ist} + \beta_2 X_{ist} + \theta_s + \delta_t + \epsilon_{ist}$$

which was clustered at the state level.

The variable of interest, *Implemented*, indicates if a state implemented a minimum wage increase in a particular month and year. If the state raised their minimum wage more than once, only the first

increase was counted. For example, Connecticut increased their minimum wage four times during the period from 2001 to 2004; but for this study, I only used the first increase in January 2001 to indicate that an increase was implemented. All months before January 2001 have a value of 0, and the month of January and thereafter are 1.

The variable X is a set of controls for each individual. These controls include age, age squared, highest level of education attained, occupation, and whether the individual is a full- or part-time worker. I also incorporated state fixed effects, represented by θ ; and year fixed effects are represented by δ .

I employed this model separately for white and black men to estimate the impact a minimum wage increase had on each racial group. If the coefficient on my variable of interest, *Implemented*, was larger for black workers than for white workers, it could indicate that a minimum wage increase is associated with a more positive impact on black workers' wages than for white, and thus with a decrease in the racial wage gap.

For the earnings gap I used a similar methodology:

$$\ln(\text{earnings})_{ist} = \beta_0 + \beta_1 \text{Implemented}_{ist} + \beta_2 X_{ist} + \theta_s + \delta_t + \varepsilon_{ist}$$

The only difference in the earnings model was my dependent variable, the log of week earnings instead of the log of hourly wages.

Finally, I applied the same difference-in-differences formula to weekly work hours:

$$\text{Hours}_{ist} = \beta_0 + \beta_1 \text{Implemented}_{ist} + \beta_2 X_{ist} + \theta_s + \delta_t + \varepsilon_{ist}$$

Just as with the other two models, I controlled for age, age squared, education, and industry. I also incorporated state and year fixed effects, along with state-year trends.

Results

Impact on the Racial Wage Gap

Figure 2a shows the change in men's average hourly wages by race in relation to each state's implementation of the first minimum wage increase, plotted at 6-month averages. This figure does not offer a clear picture of what is happening with men's wages. There is a lot of noise happening in the data in the pre-implementation period. This noise is likely due to the staggered implementations by the states. For example, only one state, Illinois, increased its minimum wage during 2004. Therefore, the data at $time = -4$ is from a very limited dataset, because Illinois is the only state that has four years of data before implementation. The same is true at the other end, $t = +4$. Only two states, Rhode Island and Washington, increased their minimums during 2000. The bulk of the data is centered around $t = 0$. While the post-implementation trends are slightly smoother, it is still not entirely clear how the two racial groups' wages are trending in relation to each other. What can be inferred from Figure 2a, though, is that white men's average wages are consistently higher than black men's by about 20%. This interpretation of the data is supported both by the data already presented in this study and overwhelmingly by the research into racial wage gaps (see Beyer & Charles, 2018; Chandra, 2003; Wilson, 2016).

The regression results for the relationship between minimum wage and workers' wages, displayed in Table 4a suggest support for my hypothesis that a minimum wage increase would narrow the racial wage gap. The regressions without controls, columns 1 and 4, display results similar to the description statistics, that the minimum wage increase was associated with a larger impact on wages for white workers than for black workers, a 7.7% increase in wages compared to 7.1%. But once various factors (age, age², level of education, occupation, and full- or part-time status) are controlled for and state and year fixed effects are added, the suggested impact of a minimum wage increase switches. A state increasing their minimum wage is associated with a 2.99% increase in black workers' wages (column 5) and only a 1.62% increase in white workers' wages (column 2). Adding in state-year trends, the associated increase in wages is even greater (columns 3 and 4). Because the hourly wages for black

workers increased by a larger percentage than those of white workers, this suggests that the minimum wage increases may be associated with a narrowing of the racial wage gap.

Impact on the Racial Earnings Gap

The average observed weekly earnings follow trends similar to those for hourly wages (see Figure 2b). There is a lot of movement in the average 6-month earnings for both sets of men, especially before implementation. As with the figure for wages, there are not many conclusions that can be drawn from this data regarding the narrowing or widening of the earnings gap. The most prominent feature of Figure 2b, as with Figure 2a, is the general gap in earnings that exists between the two sets of men, reflecting the earnings disparities shown in the descriptive statistics and in the literature on racial inequality.

The regression results for weekly earnings, displayed in Table 4b, show that increased earnings are associated with the treatment: a state increasing its minimum wage. Without controls, a minimum wage increase is associated with a 5.25% increase in white men's wages (column 1). Black men's wages increased by slightly more, 5.34% (column 4). Without controlling for any observable characteristics, the regression results indicate that there is a slight narrowing of the earnings gaps occurring at treatment implementation, and these results are significant at the 1% level.

Once controls, along with state and year fixed effects, are included, the associated change to average earnings for both black and white working men are less pronounced. The increase to black men's earnings is 2.4% (column 5), whereas for white men it is 1.4% (column 2). In other words, once workers are compared according to age, age squared, education level, and occupation, the change in earnings for both sets of men is lower.

Finally, columns 3 and 6 show that the associated earnings increased more for white working men than for black working men when accounting for state-year time trends. This reversal in who potentially received more benefits when the minimum wage was increased suggests that black men's earnings were already trending upward before the minimum wage increases went into effect. In other words, black working men saw a 1 percentage point larger increase in their earnings than white working men; however, black working men's earnings were already trending toward white working men's earnings. Therefore, the additional boost in earnings that black working men saw upon an increase in minimum wage, outside of their current earnings trend, was less impactful than it first appears.

The descriptive statistics from Tables 3a and b showed a larger increase to white men's earnings in 2004 compared to 2000 for individuals living in treated states than what the regression results suggest. As with the hourly wages, it makes sense for the descriptive statistics to show a larger effect: the descriptive statistics were measuring the change across the full sample period, rather than right before and right after implementation occurred, as is the case with the regression results; also the descriptive statistics do not take into account the differences across age, education, or occupation. Therefore, the greater benefits of a minimum wage increase appear to go to white working men, in terms of overall weekly earnings.

Discussion

This study adds to the research addressing long-standing economic disparities between whites and African Americans. Zipperer (2018) and Wilson (2016) both advocate for raising the minimum wage to alleviate racial inequality. Literature shows that there is a disproportionate percentage of the black population earning less than \$15 per hour (Huzar & Gebreselassie, 2016). There is no doubt, then, that increasing the minimum wage would increase the wages of black workers and possibly offer them net benefits. However, there is a lack of literature studying whether increasing the minimum wage could be an effective way to help address the income gap, or whether it would just be another policy that benefits both races but with more of the benefits going to white workers.

The statistics from my study suggest that raising the minimum wage may not be the effective tool that Zipperer and Wilson hope it to be. The data presented in this study suggest that while increases to the minimum wage were associated with higher overall incomes for black workers, they were also associated

with even higher overall incomes for white workers. Yet when looking at the change at the point of a minimum wage increase and controlling for observable characteristics and state-year time trends, black workers' wages increased at a higher rate than the wages for white workers. Thus, when the minimum wage is increased, black workers have a larger increase to their average hourly earnings than do white workers. These results add support to Wilson's (2016) finding that the low minimum wage has a more detrimental economic effect on black workers than it does on white workers.

However, even though wages increased, the weekly earnings show a more complicated picture. Neumark, Schweitzer, and Wascher (2004) and Jardim et al. (2017) warn that minimum wage increases can also bring hours reductions, resulting in net earnings losses to low-wage workers. When accounting for inflation, black workers' weekly earnings in 2004 were 1.3% lower than they were in 2000 for treated states. In comparison, white workers in those same states had higher average earnings by the end of the sample period than they did at the beginning. At the point of treatment implementation, a temporary increase in weekly earnings for both races appears to be more in accordance with the findings of Dube, Lester, and Reich (2010) and Jardim et al. (2018). Yet, black working men's weekly earnings boost upon implementation gets largely swallowed up by their state-year trends. In all, the changes to weekly earnings by race suggest that black workers are more vulnerable to hours reductions enacted by employers to offset higher mandatory wages for their lowest paid workers, as suggested by Neumark, Schweitzer, and Wascher (2004) and reflected in Table 4c.

Conclusion

Previous research into racial economic equality has consistently shown vastly different economic situations for black and white Americans, with respect to both income and wealth gaps. These differences have persisted for decades. To put it more bluntly, African Americans as a group have never had equal economic footing with white Americans. To find a solution to the disproportionately high percentage of black Americans in poverty, Zipperer (2018) recommended raising the minimum wage. The question is: could increasing the minimum wage be a tool to help narrow the persistent wage and earnings gaps for black Americans? Other research on the minimum wage offers mixed signals to the question of whether increasing the minimum wage helps or hurts low-wage workers of all races, though the most current studies suggest a slight benefit or no effect. However, there is not much research on how increasing the minimum would impact black and white workers separately, especially in addressing the economic disparities between the two.

The results show that a minimum wage increase is associated with higher wages and earnings for both black and white workers, while accounting for inflation. Black workers experienced a higher increase to their hourly wages than did white workers, suggesting that the minimum wage increase may have a more positive impact on black workers and help reduce the racial wage gap. Yet, when accounting for earnings trends, white workers experienced a higher increase to their weekly earnings when the minimum wage was increased, which suggests that black workers also bear more of the cost to their work hours than white workers, as seen in Figure 2c and Table 4c. It also suggests that increasing the minimum wage may not help narrow their earnings gap with white workers. Rather, increasing the minimum wage, which saw disparately increasing earnings for black and white workers, results in more of an upward shift in racial earnings than a narrowing.

It is important to note that this study did not incorporate unemployment or labor force non-participation rates into the data for earnings or wages, which could be acting as omitted variable bias. If it did, the study would likely show an even greater disparity in benefits from minimum wage increases, given that there is a higher percentage of white men who are employed and able to reap those benefits. Therefore, the earnings and wages data here are to be interpreted only for men who are employed rather than as an indication of a broader measure of the economic state of the two groups.

The findings from this study suggest that for those concerned about racial inequality, advocating for a minimum wage increase may not offer the desired outcome. While that policy change will likely benefit black workers, it may not narrow the racial economic gap. The reason why the change is unlikely to get the desired results that social justice advocates seek is two-fold. First, the costs of higher wages are

borne disproportionately by greater reductions in black worker's hours. Second, simply increasing the minimum wage does not address the root of the racial disparity. It does not address racial disparities in labor force outcomes, especially the fact that black workers are among the most vulnerable to decisions made by employers to counteract wage increases.

The suggestion, then, for policymakers and advocates, is to use a more direct and targeted tool. What is needed is a policy that specifically addresses racial inequality, which is the bigger issue at play. Blanket policies, such as the minimum wage, which will ostensibly impact people equally regardless of race, will likely have a similar outcome of shifting the disparity up but not narrowing it. Admittedly, a policy that effectively targets the deeper issue of racial inequality, which is fraught with overt and unconscious biases alike, is more difficult to identify, test, and implement. But if one could be identified and implemented it may prove more effective than a "race neutral" policy, such as the minimum wage.

This study has several limitations. First, the time period used for the dataset is short, only a 5-year span, which makes it difficult to detect trends. The small time period does not easily lend itself to a nationwide study of this nature. There are too many factors that could be influencing the outcomes, as seen in how noisy the wage and earnings trends are in Figures 2a and b. Additionally, such a short period of time does not lend itself well to a study with varying dates for policy implementation. To alleviate this problem in future studies and aid in the data analysis, researchers should use a sample in which there is more alignment in the implementation dates or covers a longer time period.

Future research should expand on the work done here to get a more complete and accurate picture for how minimum wage interacts with racial economic inequality. My study only explored the impact to wages and earnings for working white and black men. Future research that incorporates people who are unemployed or out of the labor force will be able to give insight into the overall economic impact of such policy changes on different populations, as Beyer and Charles (2018) and Chandra (2003) argue in their studies of racial income and wealth gaps. Larger studies should also include more demographics than the ones I explored here — white and black men. For example, the Economic Policy Institute found that the largest racial demographic to earn near-minimum wages was Hispanic workers (Cooper, 2018). Additionally, single women with children are significantly more likely to be living in poverty than married couples with children or single men with children (NWLC, 2018).

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Appendix

Table 2: State Characteristics, by Treatment and Control

	<i>CONTROL</i>	<i>TREATMENT</i>
NUMBER OF STATES	38	12
MEDIAN POPULATION	5,514,026	3,569,463
MEDIAN GDP	\$203,138	\$198,662
MEDIAN UNEMPLOYMENT RATE	4.96	5.33

Source: FRED, 2019a, 2019b

Table 3a: Individual Averages in Control States over Time, 2000-2004

	<i>2000</i>		<i>2004</i>	
	<i>White Averages</i>	<i>Black Averages</i>	<i>White Averages</i>	<i>Black Averages</i>
AGE	39.6	38.9	40.4	39.7
EDUCATION	High School Graduate	12 th Grade, No Diploma	High School Graduate	12 th Grade, Diploma Unclear
USUAL HOURS WORKED AT PRIMARY JOB	42.4	40.6	41.8 ▼1.4%	40.0 ▼1.5%
HOURLY WAGES	\$16.99	\$13.98	\$17.19 ▲1.2%	\$14.14 ▲1.1%
WAGE GAP	17.7%		17.8% (+0.1%)	
WEEKLY EARNINGS	\$722.82	\$570.11	\$722.48 ▼0.05%	\$565.27 ▼0.8%
EARNINGS GAP	21.1%		21.8% (+0.7%)	
POPULATION NOT IN THE LABOR FORCE	11.35%	20.93%	13.23% (+1.88%)	23.11% (+2.18%)

Note: The wage and earnings amounts displayed here are adjusted to 2004 dollars. Calculated from 2000-2004 CPS data.

Source: CPS data from Flood et al., 2018.

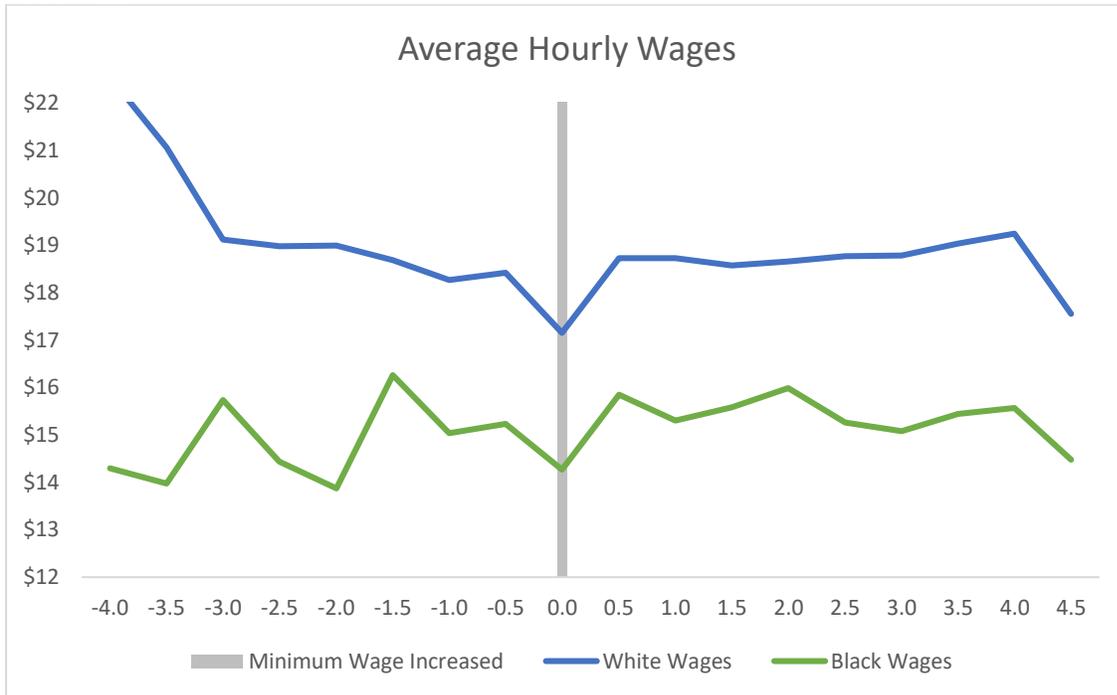
Table 3b: Individual Averages in Treatment States over Time, 2000-2004

	<i>2000</i>		<i>2004</i>	
	<i>White Averages</i>	<i>Black Averages</i>	<i>White Averages</i>	<i>Black Averages</i>
AGE	39.6	39.2	40.6	40.0
EDUCATION	High School Graduate	High School Graduate	High School Graduate	High School Graduate
USUAL HOURS WORKED AT PRIMARY JOB	41.7	40.1	41.3 ▼ 1.0%	39.5 ▼ 1.5%
HOURLY WAGES	\$18.45	\$15.38	\$18.91 ▲ 2.5%	\$15.65 ▲ 1.7%
WAGE GAP		16.6%		17.2% (+0.6%)
WEEKLY EARNINGS	\$778.22	\$621.41	\$787.14 ▲ 1.1%	\$613.08 ▼ 1.3%
EARNINGS GAP		20.2%		22.1% (+0.9%)
POPULATION NOT IN THE LABOR FORCE	11.83%	20.38%	14.43% (+2.57%)	24.54% (+4.16%)

Note: The wage and earnings amounts displayed here are adjusted to 2004 dollars. Calculated from 2000-2004 CPS data.

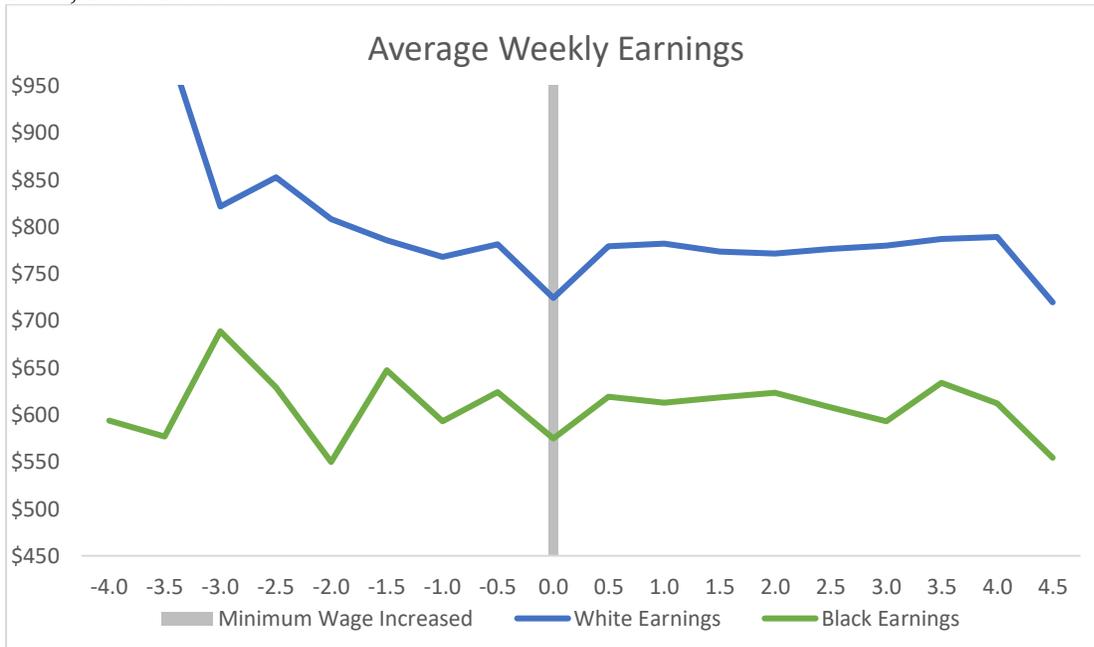
Source: CPS data from Flood et al., 2018.

Figure 2a: Average Hourly Wages in Relation to The First Minimum Wage Increase, by Race, 2000-2004



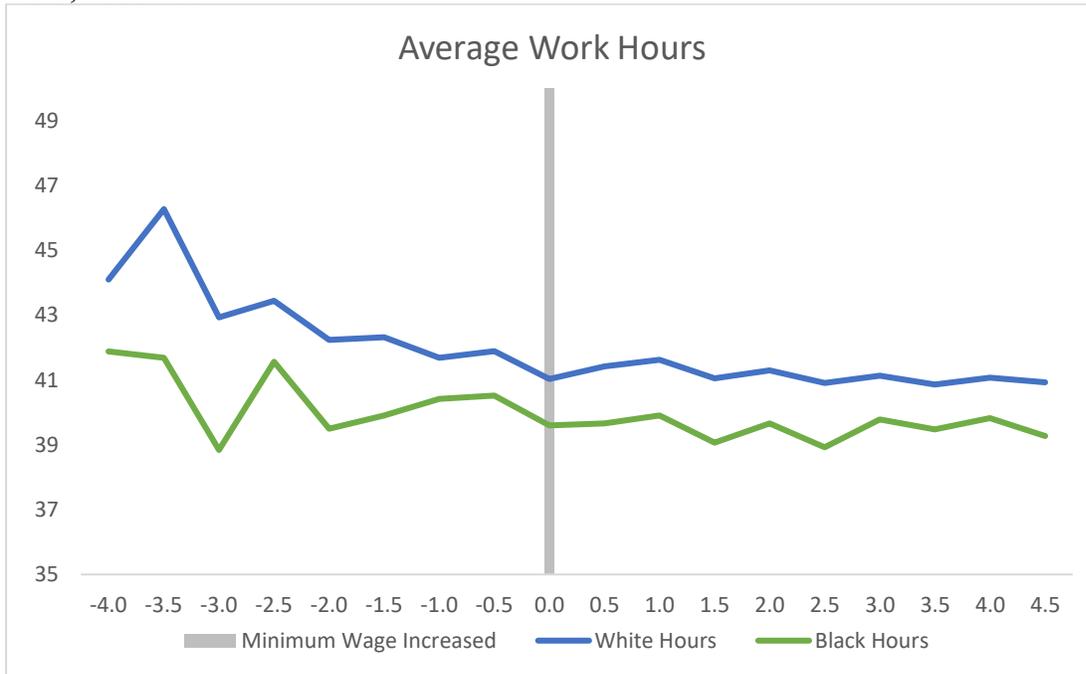
Note: The wage amounts displayed here are adjusted to 2004 dollars. Calculated from 2000-2004 CPS data. Source: CPS data from Flood et al., 2018.

Figure 2b: Average Weekly Earnings in Relation to The First Minimum Wage Increase, by Race, 2000-2004



Note: The earnings amounts displayed here are adjusted to 2004 dollars. Calculated from 2000-2004 CPS data. Source: CPS data from Flood et al., 2018.

Figure 2c: Average Weekly Work Hours in Relation to The First Minimum Wage Increase, by Race, 2000-2004



Note: Calculated from 2000-2004 CPS data.

Source: CPS data from Flood et al., 2018.

Table 4a: Regression Results for Hourly Wages using Fixed Effects and State-Year Trends, by Race

	White Wages			Black Wages		
	(1) Ln(wage)	(2) Ln(wage)	(3) Ln(wage)	(4) Ln(wage)	(5) Ln(wage)	(6) Ln(wage)
Implementation	0.0770** (0.024)	0.0162 (0.010)	0.0189 (0.010)	0.0707** (0.026)	0.0299* (0.012)	0.0361 (0.024)
Age		0.0745*** (0.001)	0.0746*** (0.001)		0.0459*** (0.002)	0.0461*** (0.002)
Age ²		-0.000780*** (0.00002)	-0.000780*** (0.00002)		-0.000450*** (0.00003)	-0.000452*** (0.00003)
Education		0.00730*** (0.0003)	0.00730*** (0.0003)		0.00866*** (0.0005)	0.00865*** (0.0005)
Occupation		-0.0000210*** (0.00000)	-0.0000210*** (0.00000)		-0.00000374 (0.00000)	-0.00000371 (0.00000)
Full-/Part-Time		-0.00871*** (0.002)	-0.00867*** (0.002)		0.00711* (0.003)	0.00716* (0.003)
Constant	2.720*** (0.012)	0.767*** (0.061)	47.04*** (0.363)	2.535*** (0.015)	0.439*** (0.082)	151.2*** (5.939)
<i>Fixed Effects</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
<i>State-Year Trends</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
<i>N</i>	190369	190639	190639	24151	24151	24151

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: The wage and earnings amounts displayed here are adjusted to 2004 dollars. Calculated from 2000-2004 CPS data.

Source: CPS data from Flood et al., 2018.

Table 4b: Regression Results for Weekly Earnings using Fixed Effects and State-Year Trends, by Race

	White Earnings			Black Earnings		
	(1) Ln(earn)	(2) Ln(earn)	(3) Ln(earn)	(4) Ln(earn)	(5) Ln(earn)	(6) Ln(earn)
Implementation	0.0525* (0.023)	0.0135 (0.010)	0.0108 (0.012)	0.0534* (0.024)	0.0239 (0.015)	0.00780 (0.027)
Age		0.115*** (0.002)	0.115*** (0.002)		0.0728*** (0.003)	0.0730*** (0.003)
Age ²		-0.00125*** (0.00002)	-0.00125*** (0.00002)		-0.000760*** (0.00004)	-0.000762*** (0.00004)
Education		0.00770*** (0.0003)	0.00769*** (0.0003)		0.00953*** (0.0006)	0.00953*** (0.0006)
Occupation		-0.0000213*** (0.00000)	-0.0000213*** (0.00000)		0.00000174 (0.00000)	0.00000187 (0.00000)
Full-/Part-Time		-0.0201*** (0.002)	-0.0200*** (0.002)		0.00637** (0.004)	0.00639 (0.004)
Constant	6.416*** (0.012)	3.803*** (0.080)	71.59*** (0.403)	6.194*** (0.014)	3.473*** (0.105)	260.7*** (7.023)
<i>Fixed Effects</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
<i>State-Year Trends</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
<i>N</i>	205605	205605	205605	25981	25981	25981
<i>Standard errors in parentheses</i>						
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$						

Note: The wage and earnings amounts displayed here are adjusted to 2004 dollars. Calculated from 2000-2004 CPS data.

Source: CPS data from Flood et al., 2018.

Table 4c: Regression Results for Weekly Work Hours using Fixed Effects and State-Year Trends, by Race

	White Work Hours		Black Work Hours	
	(1) Hours	(2) Hours	(3) Hours	(4) Hours
Implementation	-0.7978*** (0.137)	0.0496 (0.118)	-0.7073*** (0.174)	-0.622* (0.269)
Age		1.130*** (0.021)		0.717*** (0.038)
Age ²		-0.0131*** (0.0002)		-0.00816*** (0.0005)
Education		0.00761*** (0.003)		0.0349*** (0.006)
Occupation		-0.000105*** (0.00001)		0.0000796*** (0.00002)
Full-/Part-Time		-0.461*** (0.026)		-0.126*** (0.029)
Constant	41.9992*** (0.127)	1396.7*** (7.362)	40.231*** (0.136)	3135.7*** (43.493)
<i>Fixed Effects</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>
<i>State-Year Trends</i>	<i>No</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>
<i>N</i>	751872	751872	95145	95145
<p><i>Standard errors</i> in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$</p>				

Note: Calculated from 2000-2004 CPS data.

Source: CPS data from Flood et al., 2018.