

# COMPETITION AND DISCRIMINATION IN PUBLIC ACCOMMODATIONS: EVIDENCE FROM THE GREEN BOOKS \*

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## Abstract

This paper seeks to determine the role of market factors in the provision of non-discriminatory services before federal legislation forbade racial discrimination in public accommodations. Using a new county-level dataset constructed from the *Negro Motorist Green Books* on the number of non-discriminatory public accommodations from 1939 to 1955, we show that exogenous changes in the White population led to increases in non-discriminatory firms in the post-war era. To explore the role of consumer discrimination as the mechanism behind this result, we present a model of firm discrimination where a fraction of White consumers have discriminatory preferences. The model captures the relationship between the ratio of Black-to-White consumers and the ratio of non-discriminatory to discriminatory firms in a local market. Using the number of White casualties in World War II as an instrument for the change in the Black-to-White population ratio, we isolate the effect of a change in the racial composition of consumers on the incentives for firms to racially discriminate. We find that a 1% increase in the ratio of Black-to-White consumers leads to a 2% increase in the ratio of non-discriminatory to discriminatory firms. While our results show that there were limited firm responses to market conditions, ending racial discrimination in public accommodations required federal intervention.

Keywords: Green Books, public accommodations, segregation, consumer discrimination, Jim Crow laws  
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*“The wall of segregation had become so formidable, so impenetrable, apparently, that the entire weight of the American tradition of equality and all the strength of the American constitutional system had to be brought to bear in order to make even the slightest crack in it.”*

— John Hope Franklin, 1949

## I. INTRODUCTION

Racial discrimination in public accommodations was a major focus of the Civil Rights Movement. From *Plessy v. Ferguson* (1896), a Supreme Court case about segregated railway cars that established the constitutionality of “separate but equal,” to the Montgomery Bus Boycott (1955-1956) and the lunch-counter sit-ins in Greensboro, NC (1960), public accommodations have been a flash-point throughout America’s racial history. [Wright \(2013\)](#) argues that by the early 1960s denial of equal service by public facing firms was the most prominent source of racial protest in the South. The sections of the 1964 Civil Rights Act that banned racial segregation in public accommodations were the most vociferously debated—they were the subject of the longest filibuster in the history of the US Senate. Despite the prominence of segregation in public accommodations in historical and political analysis, the economic analysis of racial discrimination in public accommodations is remarkably thin.

The public discourse about racial segregation in public accommodations featured a variety of arguments about the economic impracticality of banning racial discrimination in private businesses open to the public, the role of White consumer preferences in firm discrimination, and the necessity of government legislation for private businesses to cease discriminating against Black consumers. Firm owners in the 1950s and 1960s routinely noted that racial segregation was profit-maximizing given the preferences of their White customers. The notion that White businesses were cognizant of the trade-off between potential revenue from selling to Black patrons and losses from White customers defecting to discriminatory competitors also finds support in contemporaneous accounts of Southern department store owners worried about turning profitable businesses into money-losers if they were to accept Black patronage ([Wright, 2013](#)).<sup>1</sup>

Discriminatory preferences of firm owners are not required for discrimination to hold if consumers have discriminatory preferences. At the time, variation in the discriminatory environment existed between and within firms. For example, national chains had a

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<sup>1</sup>The threat of lost business from Whites was so pervasive that it affected firm behavior outside of the United States as well. The Sevilla-Biltmore Hotel in pre-revolutionary Havana presents a striking example of this. It was initially integrated but by 1947 it had introduced segregation to appeal to White American tourists that did not want to commingle with Black guests ([Amsterdam News, 1947](#)).

well established practice of “deferring to local customs” and discriminating against African Americans in their Southern franchises, while practicing non-discriminatory policies in other locations.<sup>2</sup> Despite the prominent feature of market-based, consumer-driven arguments in support of public accommodations discrimination, there have been no empirical tests of these claims.

In this paper, we test the hypothesis that market forces drove firm decisions to racially discriminate prior to the passage of the Civil Rights Act of 1964. In particular, we examine whether more firms began serving Black customers on an equal basis with Whites as the human toll of World War II eroded their local White consumer base. We combine insights from the historical record with newly constructed county-level counts of the number of non-discriminatory firms across various service and retail industries from the *Negro Motorist Green Book*, a national directory for African American motorists published between 1937 and 1966 to facilitate travel during a time when discrimination was practiced *de facto* in some regions and *de jure* in others. We document that, in addition to other aspects of socioeconomic change, the post-World War II years were characterized by a large increase in access to public accommodations for African Americans.

We first exploit variation in White consumer population density caused by World War II causalities to estimate the relationship between White consumer population and the rise of non-discriminatory businesses. This empirical strategy has been used successfully in other work looking at the impact of war experience on a number of outcomes.<sup>3</sup> Using a differences-in-differences approach, we show that an additional 100 White casualties is associated with 1.4 more Green Book establishments in the post-World War II period. While this finding is consistent with increasing non-discriminatory businesses in areas with relatively fewer White consumers, it does not establish that consumer discrimination and market competition, the specific mechanism noted by businesses owners at the time, was operative.

To better understand the mechanism of consumer discrimination, we extend Becker’s (1971) taste-based discrimination framework to study the determinants of segregation in public accommodations.<sup>4</sup> In our model, firms maximize profits without any taste-based

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<sup>2</sup>Wright (2013) notes that major chains; such as Woolworth, Kress, Kresge, W. T. Grant, were content to acquiesce to local managers and customs, even in the early 1960s when the pressure to desegregate had begun to increase. A commonly repeated phrase at the time: “A host follows the customs of his community or he suffers economically.”

<sup>3</sup>Ferrara (2019)’s analysis of occupational upgrading during World War II is most closely related to our paper. A similar variation of this strategy has also been used to analyze the effects of manpower mobilization in World War II on women’s educational attainment and family formation (Jaworski, 2014), labor force participation (Goldin and Olivetti, 2013), and the structure of mid-century wages (Acemoglu, Autor, and Lyle, 2004).

<sup>4</sup>Becker (1971) formalized the notion of racial prejudice as a taste for discrimination, in which individuals act as though they must pay a cost or forfeit part of their income to avoid associating with people belonging

discrimination concerns of their own, while amongst consumers, members of the majority group have some level of aversion to consuming goods and services alongside members of the minority group. In equilibrium, some fraction of firms will choose to discriminate against the minority group and sell exclusively to a subset of the majority group as profit-maximizing behavior.

Our model predicts that the ratio of minority to majority consumers plays an important role in determining the ratio of non-exclusionary to exclusionary firms in a market. Specifically, firms maximize their profits by choosing whether or not to discriminate, knowing that if they choose not to discriminate, a fraction of their White clientèle will solicit their competitors. In this manner, it captures the notion, advanced by narratives such as Wright (2013), that competitive concerns were of utmost importance to firms; a non-prejudiced firm would be reluctant to integrate if it meant losing prejudiced customers to rivals that remained segregated. One implication of this model, which we call the *market conditions hypothesis*, is that a change in a local market’s racial composition will elicit a change in the discriminatory behavior of firms. Specifically, our model predicts that an increase in the ratio of Black-to-White consumers, all else equal, will result in a larger ratio of non-discriminatory to discriminatory firms.<sup>5</sup>

Since a simple regression of the ratio of non-discriminatory to discriminatory firms on the ratio of Black-to-White consumers would produce biased estimates of the coefficient of interest, we isolate the causal impact of a change in the Black-to-White consumer ratio on the ratio of discriminatory to non-discriminatory firms by exploiting exogenous shocks to the number of White consumers in a county induced by geographic variation in White World War II casualties.<sup>6</sup> Using the exogenous shock of war casualties allows us to avoid making assumptions about the level of racial animus in the community, as Whites taken from the population were not selected on their discriminatory preferences. Further, we restrict our analysis to formal lodgings (hotels and motels) as a strong test of the model’s predictions. Hotels are particularly important as they were the litmus test for public ac-

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to particular groups. In this framework, racial discrimination can arise on the part of White employers who in their decision making inflate the cost of wages paid to Black employees (therefore hiring fewer Black workers and inflating the wages of their White workers), on the part of White employees who discount the wages they receive from working at a firm that also hires Black workers (therefore bidding up their wages to work in integrated firms), or on the part of White consumers, who inflate the price they pay to shop at a firm that employs Black labor (therefore exhibiting a willingness to pay for discriminatory services).

<sup>5</sup>Intuitively, fewer (more) White (Black) consumers lessens (increases) the revenue loss (profit) of providing non-discriminatory services.

<sup>6</sup>This is due to the fact that the number of Black customers in an area may simultaneously respond to the number of non-discriminatory firms in that area, as well as the fact that both the level of discrimination and the number of Black customers may be driven by unobservable factors.

accommodations section of the Civil Rights Act of 1964.<sup>7</sup> We combine our Green Book counts of non-discriminatory hotels with newly digitized counts of the total number of formal accommodation establishments. These counts are recorded, by county, in the U.S. Census of Business, allowing us to construct a ratio of non-discriminatory to discriminatory hotels.<sup>8</sup>

In line with our theoretical framework, we regress our firm ratio on the ratio of Black-to-White consumers, instrumenting for the consumer ratio with the number of White casualties in World War II. Since the Black-to-White consumer ratio can vary depending on changes in the number of Black *or* White consumers, this strategy allows us to isolate exogenous changes in the Black-to-White ratio that are explicitly related to changes in the White population. We find that a 1% increase in the Black-to-White population ratio causes a 2% increase in the ratio of non-discriminatory to discriminatory firms. For the mean county in our sample, this translates to an additional 0.5 non-discriminatory hotels.<sup>9</sup>

Although our analysis provides empirical evidence in support of the market conditions hypothesis, the increase in the number of non-discriminatory establishments during World War II coincided with a period of immense socioeconomic change. This included an increase in the economic well-being of African Americans (Collins, 2000; Ferrara, 2019), as well as changes in attitudes towards segregation, largely driven by Black political activism.<sup>10</sup> If firms responded to the increasing incomes of Black consumers or increased political pressure by desegregating, this would confound our estimates of the market conditions hypothesis. We show that occupational upgrading and political activism among African Americans during and after World War II are unlikely to explain the degree of business desegregation observed in our empirical analysis.

Our work adds to a sparse literature on consumer discrimination and segregation in business services. Work by Gil and Marion (2020) exploits the enforcement of a ban against segregation in Washington, D.C. in 1953 to test whether segregation in cinemas was due to taste-based discrimination among cinema owners, consumers, or both parties. Another notable contribution is Roback (1986)'s study of segregated streetcars. She explores whether the development of the Jim Crow system stemmed from political considerations by elites or a widespread shift in attitude towards Blacks. Our approach is distinct from this small

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<sup>7</sup>See *Heart of Atlanta Motel v. USA* (1964)

<sup>8</sup>Using the Census of Business counts, we measure the number of discriminatory hotels in a county as the number of Census of Business hotels minus the number of Green Book hotels.

<sup>9</sup>The mean county has 1.1 hotels, so our estimates predict a significant increase in the number of non-discriminatory hotels; however, this represents a relatively small fraction of the total number of hotels in a county.

<sup>10</sup>Black social activism would have included movements like the Double V Campaign, which was an effort by Black rights activists to challenge the legitimacy of Jim Crow that took place during the Second World War. The term was coined by the *Pittsburgh Courier* in 1942 and it was a precursor to the Civil Rights Movement that took off in the mid-1950s.

literature on consumer discrimination insofar as we present a model in which segregation arises in equilibrium and then we attempt to test its implications about the determinants of firms’ decisions to serve Black customers.<sup>11</sup> Similarly, our strategy exploits exogenous changes in consumer market shares by race to address the key insight of the market conditions hypothesis.

Aside from the economic contribution of our paper, our work contributes meaningfully to the history of the Civil Rights Movement. Our analysis of the relationship between the market composition of Black and White consumers and firm behavior sheds light on how consumers may have played a part in the expansion of non-discriminatory firms before the Civil Rights Act banned discrimination in public accommodations. While this thesis was previously proposed by [Wright \(2013\)](#), we are the first to provide empirical tests of this hypothesis.

The effect sizes we estimate are economically meaningful but far below the level that would have been required to reach full equality. Our results are consistent with strong White consumer preferences for discriminatory services which would not be easily bid away via a market process. Indeed, we show that White deaths drive the expansion of non-discriminatory businesses. To be clear, extrapolating from our reduced-form estimates, the United States would have needed to engage in *several* World Wars to have even a quarter of the businesses in an area provide non-discriminatory services.<sup>12</sup> Our results therefore also highlight the necessity of federal policy in overcoming the prevailing social order of this time period. This particular finding is not only of historical importance, but is relevant in contemporary policy discussions if discriminatory beliefs in the consumer population leave a segment of the population prone to discriminatory services.

## II. A BRIEF BACKGROUND ON SEGREGATION IN PUBLIC ACCOMMODATIONS

After the Civil War, there was a federal attempt to ensure that public accommodations were provided in a non-discriminatory manner. The Civil Rights Act of 1875 explicitly forbade racial discrimination in public accommodations, ensuring “full and equal enjoyment of public accommodations,” based upon the equal protections clause of the 14th Amendment. The Act was ruled unconstitutional in 1883, when the Supreme Court ruled that Congress had

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<sup>11</sup>[Leonard et al. \(2010\)](#) also studies customer discrimination, but focuses on how the racial make up of employees impacts customers’ decisions of where to shop.

<sup>12</sup>For context, after WWII, the next event which caused such a spike in American mortality was the COVID-19 pandemic’s effect on 2020 mortality.

no authority over private firms under the equal protections clause of the 14th Amendment.<sup>13</sup> Even before that ruling, the “first Jim Crow law” was enacted in the state of Tennessee, requiring railroad companies to provide separate seating for Black first-class passengers in 1881. This legislation marked the beginning of a lengthy period of legal moves in the South that barred African Americans from equal access to services. By the time of the *Plessy v. Ferguson* Supreme Court decision in 1896, segregation was legally widespread in the Southern United States and practiced by custom in many other areas (Franklin, 1956; Woodward, 1955).

The *Plessy v. Ferguson* decision upheld the constitutionality of segregated but equal public facilities. Eventually, legal segregation had penetrated almost every facet of social life in the South, extending to churches, schools, libraries, housing, employment, restaurants, public transportation, sports, hospitals, orphanages, prisons, asylums, funeral homes and morgues (Woodward, 1955).<sup>14</sup> In fact, some scholars contend that segregation had become so entrenched in society that legal intervention was necessary for any meaningful desegregation to occur (Franklin, 1956).

Because of the notoriety of the Jim Crow laws, segregation is usually discussed in the context of the South, but areas outside of the South practiced a form of *de facto* segregation. Incidents of anti-Black riots in the North occurred as early as the 1830s and 1840s in the cities of Utica, Palmyra, New York, and Philadelphia (Franklin, 1956). Several cities experienced streetcar protests over segregation in public transportation—more than 25 protests took place between 1900 and 1905 alone (Kelley, 2010). In many cases, African Americans were prevented outright from living in certain White-only towns and restrictive covenants were also used to segregate Black residents within cities.<sup>15</sup> Jim Loewen’s meticulous work on “sundown towns” further documents the presence of *de facto* discrimination in thousands of such jurisdictions, the majority of which were located outside the South (Loewen, 2009).

By 1911, some desegregation had begun, even though segregation laws were still expanding in many parts of the United States.<sup>16</sup> Desegregation in public accommodations gained another boost after the landmark Supreme Court ruling, *Brown v. Board*, that banned seg-

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<sup>13</sup>For this reason, public accommodations non-discrimination under the Civil Rights Act of 1964 is enforced under the commerce clause, not the equal protections clause. This was immediately brought into question after the passage of the Civil Rights Act of 1964 in the *Heart of Atlanta Motel v. USA*. case decided in 1964, where the Supreme Court ruled that the Commerce Clause could be used to enforce non-discrimination.

<sup>14</sup>See Murray (1950) for a complete list of all statutes, acts, and city ordinances related to discriminatory or segregationist practices.

<sup>15</sup>Restrictive covenants on residential property transactions were not ruled unconstitutional until 1948.

<sup>16</sup>Logan (1956) discusses several achievements related to legal desegregation from 1911-1955, including cases such as *Guinn v. United States* in 1915, *Buchanan v. Warley* in 1917, and a 1951 New York City council ordinance prohibiting discrimination or segregation in private housing that were receiving tax exemptions or financial aid from the city.

regation in public schools in 1954, invalidating *Plessy v. Ferguson*.<sup>17</sup> This ruling was met with fierce opposition from those who vehemently disagreed with integration in the school system in particular, and any setting that implied equality between White and Black people more generally.<sup>18</sup> Opposition only fueled the fire of anti-segregationists. In the aftermath of *Brown v. Board*, a series of civil rights protests that later became hallmarks for the Civil Rights Movement appealed to state and local governments to desegregate public accommodations. Some of the most iconic instances of protest include the bus boycotts, freedom rides, and the sit-in movement. These events eventually culminated with Title II of the Civil Rights Act of 1964, which prohibited discrimination in public accommodations on the basis of race, color, religion, or nationality.

The Civil Rights Act of 1964 was unquestionably a turning point for American society, but in terms of its impact on public accommodations, many businesses were concerned that desegregation would negatively affect their profits. The prevailing view among business owners at the time was that serving Black customers was not economically viable. Wright discusses the chairman of a committee assembled to resolve the sit-in crisis in Greensboro, North Carolina:<sup>19</sup>

*“The managers are extremely sensitive to public reaction, and merchants engaged in general merchandising businesses who also have food departments are fearful that if they served all races on an integrated basis in the food department, they will lose a sufficient percentage of their present patronage to the nonintegrated eating establishments in our city to cause a presently profitable food department to operate at a loss.”* - (Wright, 2013, p. 78)

Anecdotal evidence from the *Green Books* also supports this view. In the 1948 edition, Victor Green recounts his efforts to find listings in North Dakota. A local from the town of Dickinson explained why he cannot provide any recommendations for inclusion in the guide:

*“[...] several places of business, while they are glad to provide for Negro customers, do not care to advertise for Negro trade. The attitude of the majority of those I contacted was that, while they themselves had no color prejudices, some*

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<sup>17</sup>In the ruling for *Heart of Atlanta Motel, Inc. v. United States* (1964), the Supreme Court list the states which had public accommodations laws on the books. Critical for our study only a handful of states had racial bans in public accommodations laws before 1952.

<sup>18</sup>Arguably the largest legal opposition to *Brown v. Board* came from the “Massive Resistance,” a campaign led by U.S. Senator, Harry F. Byrd Sr., that sought to enact a series of new laws that would block school desegregation (Mays, 2008).

<sup>19</sup>On February 1, 1960 a group of Black college students sat down and ordered coffee at the lunch-counter at Woolworth’s. Although, as Wright (2013) points out, this was not the first sit-in, it was the one that popularized the tactic and set off the sit-in movement.

*of their regular customers did have. This was the impression I gained from hotel operators, barbers, and others contacted.”* (Green, 1948, p. 4)

These examples illustrate that, prior to the Civil Rights Act, business owners were concerned that serving Black customers *on an equal basis with Whites* would alienate their majority-White customers that harbored racial prejudices. Unappreciated by many business owners who were fixated on the potential loss of White customers, Black consumers presented a potential new group of customers and increased sales at the intensive and extensive margin. It is important to stress that many discriminatory businesses *did* serve Black customers, but only in segregated and marginalizing ways. This included only being allowed to order take out as opposed to being seated in a restaurant, or not being allowed to try on clothing and shoes before purchase nor being allowed to return items after purchase. Better treatment of Black customers could have increased sales to them. Wright (2013) shows that retail sales in the South actually increased quite substantially following the passage of the Civil Rights Act, a finding that highlights that business owners harbored potentially false beliefs about the impact that desegregation would have on their profits. At the same time, a blanket ban prevented defection from desegregating firms, so the counter-threat of White customers fleeing to discriminatory firms was not possible.<sup>20</sup>

Among a plethora of other important historical questions that stem from the setting provided by the Civil Rights Movement, the aforementioned discourse gives rise to a question that stands out as pertinent for the study of firms’ incentives to remain segregated. Namely, how much (if any) desegregation of public accommodations would have occurred without legal intervention? In other words, for the economic discussions of non-discrimination policy to have any validity, it must hold that the market was somewhat responsive to these market forces before legislation banned discriminatory practices. A second question is the size of the effect—would market responses have led to the end of racial discrimination in public accommodations? Our analysis speaks to these questions, we propose a mechanism through which market forces could have led to some desegregation of firms. Empirically, we show that, while market forces likely did reduce segregation in public accommodations, they were not enough to overcome the deeply rooted social norms throughout most of the United States. We use the estimates from the first question to answer the second, which points to the necessity of federal intervention.

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<sup>20</sup>Wright (2013) stresses that business owners came to see a ban on discrimination as the only way to ensure that the defection they feared was impossible.

### III. DATA

The goal of our empirical analysis is to understand whether changes in the racial composition of consumers affect firms' incentives to discriminate. First and foremost, this analysis requires a measure of firm-level discrimination, for which we turn to listings in the Green Books. Second, since the racial composition of consumers in a given market may be correlated with other unobservable factors that may also affect a firm's decision to discriminate, we require an exogenous change to relative Black-White population ratios to fully address our question of interest. We propose that the number of White casualties in World War II can be viewed as an exogenous shifter of the market composition of Black and White consumers.<sup>21</sup> In what follows, we describe our Green Book data in more detail, as well as the World War II casualty data, and additional data sources used in our empirical analysis.

#### *III.A The Green Books and the Level of Discrimination*

To construct an estimate of the number of non-discriminatory firms in each county we collect a novel dataset of firms that were friendly towards African American consumers from a series of travel-guides called the *Negro Motorist Green Books*. The Green Books were published between 1937 and 1966, with a brief interruption during World War II, when many resources were diverted to focus on the war effort.<sup>22</sup> Although the intent of the Green Books was to assist African American motorists, many establishments that are listed in the Green Books were not exclusively for tourists. These include barbershops and beauty parlors, restaurants and drinking establishments, as well as pharmacies, liquor stores, and florists. A more detailed historical background on the Green Books can be found in the comprehensive accounts of [Sorin \(2020\)](#) and [Taylor \(2020\)](#).

The Green Books are available through the New York Public Library's Digital Collections. We constructed a dataset consisting of the geocoded location of each establishment for each year in which the Green Books were published. In panel (a) of [Figure 1](#) we map the location of Green Book establishments in 1941, the year that the United States joined World War II. Panel (b) displays the location of Green Book establishments in 1947, the first year the Green Books resumed publication following the end of the war. Since the points

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<sup>21</sup>Similar identification strategies have been used to study how the shortage of male labor during World War II affected female labor market outcomes ([Acemoglu et al., 2004](#); [Fernandez et al., 2004](#); [Goldin and Olivetti, 2013](#); [Jaworski, 2014](#)). Most closely related to our work, is that of [Ferrara \(2019\)](#), who uses the World War II casualty rate of semi-skilled Whites to identify the effect of White labor shortages on occupational upgrading among Black workers.

<sup>22</sup>For example, during the war, gasoline was heavily rationed; most Americans were limited to enough fuel for approximately 8.5 miles of driving per day, this greatly diminished the use for a motorist guide ([Taylor, 2020](#)).

represent precise geocoded locations, and there may be many points within reasonably close proximity, it is difficult to appreciate the magnitude of the change in Green Book establishments during the wartime period by simply looking at the maps. Figure 2 displays the total number of Green Book establishments between 1939 and 1955, which makes clear the large increase in Green Book establishments between 1942 and 1947. The focus of our analysis is on the years 1939 to 1955 for two reasons. First, the Green Books did not become nationally representative until 1939.<sup>23</sup> Second, in Cook, Jones, Logan, and Rosé (2020) we show that there was a large drop in the number of establishments after 1955 which we suggest has to do with a change in policy surrounding advertisements. Since this renders the post-1955 Green Books different from the pre-1955 Green Books, we concentrate our analysis on the years up to 1955.<sup>24</sup>

One important question about using Green Book listings as a proxy for the level of discrimination in a county is how to interpret changes in their number. A higher supply of non-discriminatory businesses, all else equal, indicates a less racially prejudiced market. However, the Green Books are not an exhaustive directory of all non-discriminatory establishments in the United States over the period of study. The number of listings in a particular county reflects at least two forces. It represents the supply of establishments that are friendly to African Americans and willing to be identified as such in the guide, which would be negatively correlated with discrimination against Black consumers. It also represents the demand for information about establishments on the part of Black motorists, which will be positively correlated with discrimination because knowledge of where welcoming establishments are located is more valuable in hostile areas. If the first effect dominates, an observed increase in Green Book listings can be interpreted as greater access to public accommodations, or equivalently, less discrimination.

To gain some insight into this issue, we compare Green Book establishment counts with the cumulative number of discriminatory laws by 1949 at the state level.<sup>25</sup> The left plot of Figure 4 displays the relationship between the total number of Green Book listings and the number of discriminatory laws passed in states before 1949, where both variables have been residualized by the Black population in 1950. The right plot of Figure 4 displays the total number of Green Book listings and anti-discrimination laws passed prior to 1949, both of

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<sup>23</sup>The 1938 edition has a note explaining that “[t]he 1939 issue will contain the western section of the United States and will be complete” (Green, 1938).

<sup>24</sup>Cook, Jones, Logan, and Rosé (2020) provides more background on the Green Books, the data collection and geocoding process, and the geographic trends, patterns, and correlates found in the data.

<sup>25</sup>We construct the counts of the cumulative number of discriminatory laws from digitizing Pauli Murray’s *States’ Laws on Race and Color* (1950). In this 746-page publication, eminent civil rights activist and lawyer, Pauli Murray compiled a list of all laws that were related to segregation and discrimination in the United States. More details on this data source are provided in the Online Appendix.

which are also residualized by the Black population in 1950. Both figures suggest that Green Book establishments are more prevalent in areas with higher levels of discrimination.<sup>26</sup>

A related concern about the feasibility of using Green Book listings to understand discriminatory behavior has to do with how accurately Green Book listings reflect the level of non-discriminatory firms in a region. This comes down to asking whether changes in listings over time reflect a greater number of non-discriminatory firms or merely the acknowledgment of existing non-discriminatory firms in Victor Green’s publication. One important point of clarification that helps to attenuate this concern is that the Green Books’ objective was to provide Black motorists with a directory of establishments that would welcome them and treat them with dignity, thereby providing a higher bar for establishments than merely accepting their patronage whilst providing second-class treatment. In our empirical methodology section, we discuss the possibility of selection into the Green Books and how it relates to our empirical strategy in more detail.

### ***III.B World War II Casualties***

Our empirical strategy uses exogenous variation in the number of White casualties across counties during World War II to identify the effect of changes in the number of White consumers on the growth in the number of Green Book establishments. We obtain World War II casualty data directly from Ferrara (2019) who matched the WWII Enlistment Records to the WWII Honor List of Dead and Missing for the Army and Army Air Force using a combination of direct matches on unique serial numbers and probabilistic matching on name and demographic characteristics for those serial numbers that were indecipherable.<sup>27</sup>

Figure 3 shows the geographic variation in the number of White casualties during the war. We use the level of White casualties, rather than the White casualty rate, as we assume that firms in our framework care about the number of Black and White consumers in a local market. Key to our identification is the plausible exogeneity of the geographic variation once we have accounted for other factors that were related to mobilization during the war. While the Selective Training and Service Act (STSA) of 1940 required all men aged 21 to 35 to register with local draft boards, deferments were initially widespread and could be granted based on having dependents, employment in specific occupations, and physical and mental disabilities (U.S. Congress, 1940). Deferments eventually became more difficult to obtain and the maximum age of conscription increased through several extensions to the STSA (Goldin and Olivetti, 2013). By the end of the war, nearly 17 million Americans

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<sup>26</sup>Removing outliers does not meaningfully impact the correlations displayed in these plots.

<sup>27</sup>This is not an exhaustive list of all Americans that died during WWII. It excludes enlistees that served in the Navy, Marines, and the Coast Guard, but it captures the vast majority of servicemen deaths. See Ferrara (2019) for further discussion about the details of the matched WWII enlistment-mortality data.

had served in military, approximately 60% of whom were draftees and 40% volunteers ([The National WWII Museum, 2021](#)).

Not surprisingly, in [Figure 3](#) it is apparent that the number of White casualties are higher in population centers, like southern California and the eastern seaboard. In the [Online Appendix](#) we also show that White casualties tend to be lower in areas that had more Black postal workers in 1940 and higher in areas where the number of Whites who rented their own homes was higher and where the White population was higher. We are therefore careful to check that the addition of these controls does not confound our estimates of the treatment effect in our empirical specifications.<sup>28</sup>

It is also important to note that racist attitudes within the military meant that Black enlistees had proportionally lower mortality during WWII as they were significantly less likely to be placed in combat roles.<sup>29</sup> An example of such attitudes is found in the June 1945 Congressional Record, where James Eastland (D-MS) used the racial policies of the military to declare Black veterans inferior soldiers. Eastland said:

*“In not one instance, Mr. President, could they place a Negro officer in a responsible position. In not one instance could they place upon his shoulders the responsibility of combat [...] Had we depended upon it, the German Army would have gone south to the toe of the Italian boot and destroyed our armies in Europe. The Negro soldier was an utter and dismal failure in combat in Europe.”*

Going further, he stated that soldiers from the South were fighting in World War II to maintain White supremacy and that this sentiment was widely shared and not restricted to Southerners, but simply more open among them. Given these prevailing attitudes, there were very few Black combat units, with African American involvement primarily taking the form of support units ([Lee, 1963](#)). In total, fewer than one million African Americans served in the war, although they were by far the largest minority group in the military ([The National WWII Museum, 2021](#)). It was not until July of 1948, when President Truman issued Executive Order 9981, that the armed forces desegregated.

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<sup>28</sup>We also include a variety of additional controls that may impact World War II enlistment, as well as the growth in the number of Green Book establishments. Some of these factors have been used in other work employing similar identification strategies, like the share of farmland ([Acemoglu et al., 2004](#)). Other factors we hypothesize may impact deferment through alternative channels, like on compassionate grounds—e.g., religiosity. These controls are discussed in more detail below.

<sup>29</sup>Until the Korean War, African American troops were generally confined to non-combat roles in the armed forces ([Indacochea, 2019](#); [Ferrara, 2019](#)).

### *III.C Descriptive Statistics*

Before presenting the results of our empirical analysis, we provide a brief description of the summary statistics in our data, with an eye to county demographics, World War II impacts, and Green Book listings. Table 1 reports county characteristics in 1940, separately for those that appeared in the Green Books over the 1939-55 period and those that did not. Counties that had at least one Green Book establishment were larger in terms of population than ones that did not. However, this is true of both their White and Black populations and, as a result, the ratio of African Americans to Whites is not drastically different, sitting at 25% in listed counties compared to 21% in unlisted ones. Listed counties were less rural, as measured by the share of the Black population that reported living in a rural residence, and were more residentially segregated.<sup>30</sup> Other proxies for discrimination such as the number of Confederate symbols and the number of historical lynchings of the Black population are more prevalent in counties with Green Book listings. Given the historical literature about the role of Green’s postal worker network in soliciting listings, we also include the number of Black postal workers in our analysis. Perhaps unsurprisingly, Table 1 shows that counties with at least one listing had a greater number of Black mail-carriers than those that did not.<sup>31</sup>

In terms of the breakdown of Green Book listings, Table 1 shows that, on average, in 1940 informal lodgings—primarily tourist homes (individual households, most often Black, offering accommodation to tourists) and Y.M.C.A.s—are the most numerous listings, with an average of 2 establishments in the listed counties. Meanwhile, formal lodging, which includes hotels and motels, are at about half of this level and are roughly even with eating and drinking places. Figure 5 presents the time series of listings by type of business at the national level. We observe that the relative rankings of the different types of establishments change over our period of study, informal accommodations gradually decrease while formal accommodations and eating and drinking establishments become more numerous. Combined, informal and formal accommodations make up the largest number of establishments over the time period, but individually, eating and drinking establishments make up the largest number of establishments.

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<sup>30</sup>This finding is robust to different choices of residential segregation measures. Although these indices are usually strongly correlated, this is not universally true. See Logan and Parman (2017) for a thorough discussion of the differences in how these measures are calculated and what they attempt to capture.

<sup>31</sup>This is not the case if we compare Black mail-carriers per (Black) capita; however, it is unclear that this is the relevant quantity since the absolute size of the Black postal workforce is likely to be more important for canvassing listings.

## IV. THE IMPACT OF WHITE WWII CASUALTIES ON THE GROWTH IN GREEN BOOK ESTABLISHMENTS

### *IV.A Difference-in-Differences Methodology*

To understand whether population is causally related to the provision of non-discriminatory businesses, we begin with a difference-in-differences specification that estimates the differential change in the number of Green Book establishments in counties with varying levels of White casualties in World War II. Effectively, this specification estimates the causal relationship depicted in Figure 7, which plots the change in the number of Green Book establishments between 1941 and 1947 on the vertical axis against the number of White casualties during World War II on the horizontal axis. Using White casualties to proxy for exogenous changes in the number of White consumers in the difference-in-differences framework is useful because we can use all years of available Green Book data between 1939 and 1955 and estimate the impact of a change in the White customer base on the provision of non-discriminatory businesses. This flexible specification focuses on how the number of Green Book establishments is related to the level of exogenous change in White consumers for all years and industries in our dataset.<sup>32</sup> Specifically, we estimate:

$$N_{0_{c,t}} = \beta_0 + \beta_1 \text{casualties}_c \times \text{post-WWII}_t + \phi_c + \zeta_t + \epsilon_{ct}, \quad (1)$$

where  $N_{0_{c,t}}$  is the number of Green Book establishments in county  $c$  at time  $t$ ,  $\text{casualties}_c$  is the number of White casualties (in 100s) in county  $c$ , and  $\text{post-WWII}_t$  is an indicator equal to 1 if the year is after World War II. We are interested in the estimate,  $\hat{\beta}_1$ , which measures the differential change in the number of Green Book establishments after World War II attributable to an additional 100 White casualties. We include time fixed effects,  $\zeta_t$ , to account for unobservable factors that vary across time, but not counties, in addition to county fixed effects,  $\phi_c$ , to control for time-invariant unobservable factors that vary across counties. Standard errors are clustered by county in all specifications.

In some specifications we replace county-level fixed effects with a matrix of pre-WWII control variables,  $\mathbf{X}'_c$ , to account for a variety of initial conditions that could be simultaneously correlated with the number of WWII casualties and the growth in Green Book establishments. These controls include the share of farmland in 1940, as this has been shown to be an important determinant of mobilization during WWII (Acemoglu et al., 2004). We

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<sup>32</sup>An advantage of this empirical approach is that it is more comprehensive, in terms of its use of the Green Book data, than the specification derived directly from the theoretical model that we present later in the paper.

also include per-capita measures of various religious denominations in 1940,<sup>33</sup> and the population in 1940,<sup>34</sup> both of which are taken from Haines (2010). Importantly for an analysis using the Green Book data, we include measures of the number of Black postal workers,<sup>35</sup> average educational attainment, and the prevalence of household appliances from the 1940 Census of Population (Ruggles et al., 2020); manufacturing involvement and WWII contracts (United States. Bureau of the Census, 2012); in addition to Confederate symbols (Southern Poverty Law Center, 2019), historical lynchings (Cook, 2012), and residential segregation (Logan and Parman, 2017). From the 1940 Census of Population, we also include the share of Black residents who had migrated from out of state in the last 5 years and the share of Black residents who had migrated within state in the last 5 years. Conditioning on existing Black migrants is useful for capturing migration chains and is reminiscent of the shift-share instruments used in other work to identify migration-induced changes in the Black population (Boustan, 2009; Derenoncourt, 2019).

Identification of the causal impact of White World War II casualties on the growth in Green Book establishments is based on several standard assumptions embedded in the difference-in-differences framework. First, counties with low levels of casualties must share common support with counties with high levels of casualties. Fortunately, we have a reasonably rich set of controls that help mitigate any pre-existing differences across counties with different levels of White casualties. Second, changes in Green Book listings must reflect real changes in the provision of non-discriminatory public accommodations and not merely selection into the Green Books. If there is selection across counties, a sufficient condition for this assumption being met is that the selection process is independent of the treatment.

Figure 6 displays time series of the number of Green Book establishments in the full sample, the number in counties that had at least one Green Book listing in the previous year, and the number that occur in new counties. Nearly all of the growth in Green Book establishments between 1939 and 1955 occurred in counties that had at least one Green Book establishment in 1939. While this does not rule out selection within a county or city that had an existing Green Book, it does alleviate the concern that selection occurred across counties.

The third assumption that is required to interpret  $\hat{\beta}_1$  as the causal effect of White casualties on the growth of Green Book establishments is that there cannot have been any

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<sup>33</sup>These include Baptists, Congregationalists, Disciples, Lutherans, Methodists, Presbyterians, Episcopalians, Roman Catholics, Jewish, and all other religions.

<sup>34</sup>It does not make a difference whether we condition on total population or the White population.

<sup>35</sup>We do this because Victor Green was a postal worker and he sourced listings from a network of Black U.S. postal workers that were familiar with their localities (Khan, 2015; Taylor, 2020). In Cook et al. (2020) we show that this measure is a strong predictor of Green Book presence in a county.

anticipation effects leading up to World War II. This means that Green Book establishments cannot have been increasing prior to World War II in anticipation of the shortage of White consumers induced by the war. This is an assumption that is plausible given the nature of America’s involvement in the war.

The fourth and final assumption is that of parallel trends, which requires that in the absence of World War II all counties would have experienced the same growth in Green Book establishments, regardless of their level of White casualties. Since the parallel trends assumption is speculative in nature—that is, we cannot say for certain what *would* have happened if World War II had not occurred—we cannot test it directly; however, we can estimate an additional empirical specification that lends support to the credibility of the assumption. To do so, we estimate an event study framework:

$$N_{0ct} = \psi_c + \varphi_t + \sum_{t=1939, \neq 1941}^{1955} \lambda_t \mathbb{1}(\text{year} = t) \times \text{casualties}_c + \epsilon_{ct}, \quad (2)$$

where we replace the interaction of White casualties and the indicator for being observed in the post-war period with a set of interactions between the level of White casualties and each year. We leave out 1941 so that all coefficients are measured with respect to the first year the United States formally entered World War II. If there were no differential pre-trends in the number of Green Book establishments observed in counties with high and low enlistment rates, then the coefficient estimates on the interaction terms in the pre-war period should not be statistically different from zero.

The event study estimates are found in Figure 8. Each of the points represents a separate coefficient estimate of  $\lambda_t$  from equation 2. Bands represent 95% confidence intervals. Immediately this figure makes it clear that there were no differential trends in the growth of Green Book establishments before the war, lending credence to the parallel trends assumption. After WWII, an additional 100 White casualties is associated with just over one additional Green Book establishment. This treatment effect remains stable over time, suggesting that the number of Green Book establishments grew faster during the wartime period, but did not continue to diverge after White deaths from the war subsided.<sup>36</sup>

## ***IV.B Difference-in-Differences Results***

We display the results from estimating equation 1 for the full set of industries that appear in the Green Books in Table 2, where the pre-treatment period includes the years 1939-1941 and the post-treatment period is 1947-1955. Column (1) presents standard difference-in-

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<sup>36</sup>Since this event study estimates in Figure 8 only use two years of pre-World War II data, we also show that the growth in Green Book establishments followed parallel trends going back to 1938 in the Online Appendix.

differences estimates where we do not include any controls or fixed effects, other than state fixed effects.<sup>37</sup> The treatment effect of approximately 1.4 can be interpreted as an additional 1.4 Green Book establishments after WWII in counties that experienced an additional 100 White casualties. Given that the mean number of Green Book establishments in counties was 0.63 in 1941, this increase in Green Book establishments represents an economically meaningful change in the magnitude of the non-segregated market.

Column (2) of Table 2 includes the full set of county-level controls, as well as year fixed effects. For counties that are missing controls, we replace the value of the missing control with a 0 and include a dummy variable that equals 1 if the county is missing a particular control in a given year.<sup>38</sup> The coefficient estimate decreases slightly from column (1) but remains economically and statistically significant. Column (3) replaces county controls with county fixed effects and the results are nearly identical to those in column (1). Column (4) is slightly more restrictive, in that it adds state  $\times$  year fixed effects on top of county and year fixed effects. Again, we see the coefficient estimate remains stable, albeit slightly larger in magnitude. Finally, our most restrictive specification, column (5) includes county-level linear time trends in addition to county and year fixed effects. The coefficient estimate in this specification suggests that an additional 100 White casualties is associated with 1.7 more Green Book establishments. Since the coefficient estimates are relatively independent of specification choice, our preferred specification for the remainder of this section is the most parsimonious one which includes only county and year fixed effects.

One concern that may arise from our choice of sample years is whether our results depend on the time frame we have chosen for our estimation. Although the stability of the time-varying treatment effects displayed in our event study plot suggests that this is likely not an issue, we examine this possibility more thoroughly by re-running our analysis sequentially dropping years from our sample. Figure 9 displays the results from this exercise, where the first coefficient (in red) is the coefficient estimate from our main analysis. As expected, the coefficient estimates do not vary substantially from one sample to the next which alleviates concerns that our result may depend on the chosen time frame.

An additional concern with our specification is the extent to which our results may be driven by outlier counties—that is, counties with very high or low levels of White casualties that are not representative of the average county in our sample. We evaluate the stability

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<sup>37</sup>This amounts to controlling for an indicator that equals 1 if the year is after WWII as well as the level of White casualties, instead of controlling for year and county fixed effects. We include state fixed effects to capture regional variation in the propensity to discriminate, but the results are similar if we omit these.

<sup>38</sup>Our empirical results are robust to case-wide deletion of counties that have missing values for any of the control observations. We use the dummy variable adjustment strategy because our preferred specifications are estimated parsimoniously using county fixed effects, which allows for the inclusion of counties that would otherwise be dropped from the estimation sample.

of our coefficient estimates along this dimension by systematically dropping counties at the top and the bottom of the distribution of White casualties in increments of one percentile up to twenty-five percentiles. This means that trimming the top and bottom percentiles leaves the middle 98 percentiles, and trimming the top and bottom 25 percentiles leaves the middle 50 percentiles (interquartile range) of the distribution. The results of this exercise are found in Figure 10, where the first coefficient estimate in red is the estimate from our preferred specification that uses the full set of counties and includes county and year fixed effects. While the coefficient estimate is largest in our preferred specification, it is relatively stable up until we have dropped the top and bottom 10 percentiles, trimming approximately 20 percent of the sample. More important, by definition this significantly restricts the variation in casualties needed to estimate the causal effect. Even with this caveat, the coefficient estimate is still positive and statistically significant at the 95% level, as indicated by the confidence bands surrounding each estimate.

Next, we examine the heterogeneity in treatment effects across regions and industries. Table 3 displays the effects by region, where columns (1) through (4) restrict the sample to each of the four regions. Column (5) pools regions and interacts the treatment effect with region dummies to test whether the regional estimates are statistically different from one another.<sup>39</sup> The coefficient estimates appear to be in line with one another for each of the four regions, with the South having the largest treatment effect of 1.9 additional Green Book establishments for an additional 100 White casualties. Although this estimate indicates close to one additional Green Book establishment relative to the next closest treatment effect, pooling the sample and testing for differences does not indicate that the coefficients are different from one another, as the  $p$ -value on this joint hypothesis is 0.67, reported in column (5). The fact that non-segregated markets grew to a similar extent across all regions suggests that the treatment effect is not being driven by unobserved region-specific factors.

Due to the detailed nature of our Green Book data, we are also able to provide an analysis of treatment effects by the type of industry. Table 4 displays these results with the full sample results in column (1), and then presenting estimates for barber shops and beauty parlors in column (2), eating and drinking establishments in column (3), gas or service stations in column (4), hotels and motels, which we call “formal lodging,” in column (5), informal accommodations in column (6), and other establishments in column (7). The breakdown by type of establishment lends additional support to the general thrust of the market composition hypothesis regarding firms’ incentives to discriminate.

First, the largest effect is among eating and drinking establishments ( $\hat{\beta} = 0.738$ ), which are businesses that are not always intended for tourists, and should, therefore, be most

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<sup>39</sup>All columns include county and year fixed effects.

affected by the number of White casualties in the county in which the business is located. Gas stations, which were generally less discriminatory than restaurants and lodging (they typically provided gas service, but would not always provide access to restrooms for Black customers), have one of the smaller effects ( $\hat{\beta} = 0.061$ ); however, the smallest effect appears for informal accommodations ( $\hat{\beta} = 0.017$ ). This last finding is reassuring because the results for informal accommodations act as a quasi-placebo test for the market conditions hypothesis. With the exception of Y.M.C.As and Y.W.C.As, these establishments were not patronized by White clientele, so a decrease in the county-level White population should have a limited impact on the demand for informal lodging services as they were not used by Whites.

Table 5 presents a series of additional specifications related to the heterogeneity in effect size. Column (1) again reproduces the main specification for comparability. Columns (2) and (3) evaluate the treatment effect for Green Book establishments that are located inside versus outside the 1950 Standard Metropolitan Area (SMA) boundaries.<sup>40, 41</sup> Here, we see that the entire treatment effect is driven by establishments within SMA boundaries. This finding runs counter to the notion that the Green Books were solely a tool for African American motorists in transit between urban centers. The Green Books did assist motorists in finding safe accommodations on the road, but were also important directories of Black-friendly establishments within cities.

The next three columns restrict to counties where 100% of Black residents lived in rural locations, where Black residents lived in a mix of rural and urban locations, and where all Black residents lived in urban locations, respectively. These specifications indicate that more White casualties led to more growth of non-segregated establishments in counties where at least some Black residents lived in urban areas. Column (7) presents the results of the main specification weighted by the White population in 1940, where we find a similar coefficient estimate to that in column (1). Finally, column (8) shows the coefficient estimate is robust to dropping counties from the top and bottom percentiles of the distribution of White casualties.

Table 1 of the descriptive statistics section made it clear that the majority of counties did not have any listings in the Green Books. Motivated by this fact, we test the margins of adjustment in Table 6. Column (1) replicates our preferred county and year fixed effects specification for reference. Then, in column (2) we estimate a linear probability model in our treatment variable, where our dependent variable is an indicator that equals 1 if a county

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<sup>40</sup>SMA's were counties with a central city of 50,000 or more residents as well as adjacent counties that were integrated with the central city and also metropolitan in character (Bogue, 1955).

<sup>41</sup>These were computed using the NHGIS county and 1950 SMA shapefiles that are accessible on IPUMS (Manson et al., 2020).

has at least one Green Book establishment in year  $t$ . This treatment effect is both small in magnitude and imprecisely estimated, suggesting that the impact of White WWII mortality on Green Book listings occurred along the intensive margin. We examine this hypothesis more closely in column (3) which restricts our sample to only include counties that had at least one Green Book establishment in 1939. This coefficient estimate is almost identical to column (1). Thus, the growth in Green Book establishments occurred primarily in counties that already had at least one Green Book listing, rather than across counties that were not listed in the Green Books prior to World War II. For completeness, column (4) provides a specification with an elasticity interpretation, where a 10% increase in White casualties in WWII would result in a .6% increase in the number of Green Book establishments.

Thus far, we have presented empirical evidence that higher levels of White mortality in WWII had a positive causal impact on access to public accommodations for African Americans throughout the United States and across a wide range of retail and service sector businesses. We have also suggested that the causal relationship between White casualties and Green Book growth is related to the change in the market composition of Black and White consumers; however, we have not provided a model nor formal test for this hypothesis. The difference-in-differences specification shows that White casualties were related to more businesses providing non-discriminatory services, but does not identify the mechanism. The following section models the market conditions hypothesis for firm decisions to segregate given a composition of consumers and subsequently links the model to empirics, more closely testing the role of consumer population shares to firm decisions.

## V. CONSUMER DISCRIMINATION AND FIRM SEGREGATION

### *V.A A Simple Model of Firm Segregation*

Here, we present a simple model that captures the equilibrium relationship between firms' decisions to discriminate and consumer tastes. The modeling approach combines elements of Becker's (1971) taste-based discrimination framework with Salop's 1979 circular city entry model. Central to our modeling approach is the notion of sub-markets that are indexed by  $d$ . In one of them,  $d = 1$ , segregation takes places—firms do not sell to members of the minority group. In the other,  $d = 0$ , firms sell to both majority and minority group consumers. Both of these sub-markets are unit circles with firms and consumers located on the perimeter.<sup>42</sup>

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<sup>42</sup>For the sake of clarity (and to tie in more closely with our empirical exercise), the terms White and Black will be used in the place of majority and minority, respectively, when discussing the two types of consumers.

Agents make decisions in the following order: first, firms observe the number of firms in each sub-market and choose which one to enter—the segregated ( $d = 1$ ) or non-segregated ( $d = 0$ ) market. Once firms have chosen their sub-markets, they set prices. Next, consumers choose which sub-market to purchase from, taking into account prices and anticipated transportation costs. For Black consumers the decision is trivial, they are limited to purchasing from the non-segregated market. Meanwhile, White consumers, who may have discriminatory preferences, have to choose whether to purchase from the segregated or non-segregated market.

**Consumers:** The environment consists of a measure one of consumers,  $\theta$  of which are Black,  $b$ , and  $(1 - \theta)$  of which are White,  $w$ . Each individual consumes one unit of the good,  $g$ . A White consumer’s payoff from purchasing  $g$  from firm  $j$  is:

$$u_{W,i}^d = \begin{cases} g - p^1 - t \mathbb{E} | \delta_i^1 | & \text{if } j \text{ discriminates, } d_j = 1 \\ g - p^0(1 + \eta_i) - t \mathbb{E} | \delta_i^0 | & \text{if } j \text{ does not discriminate, } d_j = 0 \end{cases}$$

The parameter  $\eta_i$  is consumer  $i$ ’s discrimination coefficient. This captures the disutility that a discriminatory individual (a person with  $\eta_i > 0$ ) experiences when they consume  $g$  from a firm that also serves Black customers. Each individual  $i$  knows their  $\eta_i$ , while firms know that  $\eta_i \in [0, \infty)$  with pdf  $f(x)$  and cdf  $F(x)$ . Consumers take into consideration the prices in the two sub-markets,  $p^1$  and  $p^0$ , and expected travel costs to the nearest firm in each sub-market,  $t \mathbb{E} | \delta_d^0 |$  for  $d \in \{0, 1\}$ . Consumers have to form expectations over travel costs because we assume that when a consumer chooses a sub-market they are randomly placed on the corresponding unit circle, as a result, they do not know their exact location relative to those of firms.<sup>43</sup>

It follows that a White consumer will choose to purchase from a segregated firm if:

$$\begin{aligned} \underbrace{g - p^1 - t \mathbb{E} | \delta_i^1 |}_{u_{W,i}^1} &\geq \underbrace{g - p^0(1 + \eta_i) - t \mathbb{E} | \delta_i^0 |}_{u_{W,i}^0} \\ \eta_i &\geq \frac{p^1 - p^0}{p^0} + \frac{t(\mathbb{E} | \delta_i^1 | - \mathbb{E} | \delta_i^0 |)}{p^0} \\ \eta_i &\geq \frac{p^1 - p^0}{p^0} + \frac{t}{4p^0} \left( \frac{1}{N^1} - \frac{1}{N^0} \right) \end{aligned}$$

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<sup>43</sup>One could think about distance as being along a characteristic dimension (aside from price) of the object being sold instead of physical distance. In this case, consumers are not sure exactly how far the good or service being transacted is from their preferred variety.

The intuition is that individuals with “high”  $\eta$ s are willing to “pay” to discriminate in the form of higher prices at stores that do not serve Black customers. A person,  $i$ , with discrimination coefficient  $\eta_i$  will prefer to purchase from the segregated firm if the “discrimination mark-up” plus the expected difference in travel costs is smaller than his/her discrimination coefficient. As a result, we arrive at the condition that for a given set of prices,  $p^0$  and  $p^1$  and expected travel costs,  $\bar{\eta}$  is the cut-off discrimination coefficient. Any person with a discrimination coefficient above this level will choose the discriminatory sub-market.

Meanwhile, for a Black consumer, the payoff to purchasing  $g$  from an unsegregated firm  $j$  ( $d_j = 0$ ) is:

$$u_{B,i}^0 = g - p^0 - t \mathbb{E} |\delta_i^0|$$

Recall that Black consumers can only purchase from non-discriminatory firms and they do not incur a disutility from this transaction. The decision of a Black consumer is to purchase good  $g$  from firm  $j$  if the utility from doing so is greater than the price of the good plus the transportation costs ( $g > p^0 + t \mathbb{E} |\delta_i^0|$ ). For simplicity, we assume that this inequality holds for all Black consumers, thus they are randomly allocated to firms in the non-segregated sub-market (since they are uniformly distributed around the unit circle).

Combining the share of the Black population ( $\theta$ ), the preferences of consumers, and the distribution of  $\eta$ , we arrive at the following expressions for the densities of consumers, denoted  $S^d$ ,  $d \in \{0, 1\}$ :

$$S^d = \begin{cases} (1 - \theta)[1 - F(\bar{\eta})] & \text{if market is segregated, } d = 1 \\ \theta + (1 - \theta)F(\bar{\eta}) & \text{if market is not segregated, } d = 0 \end{cases}$$

**Firms:** Now we turn to the problem faced by firms. They must decide which sub-market to enter and what price to set while taking into account what they know about the preferences of consumers. Our modeling of the sub-markets and solution method draws heavily from [Salop \(1979\)](#), which uses the backward induction solution method. First, we solve for prices in each sub-market, and then we use these to solve for the segregation decision of firms.

Firms are assumed to be identical with cost functions,  $C(q) = cq$ .<sup>44</sup> Suppose that  $N^d$  firms enter sub-market  $d$  in the first stage and are located equidistantly along the circumference of the unit circle. This has the important implication that the distance between the firms is  $\frac{1}{N^d}$ .

In order to solve for an arbitrary firm  $j$ 's pricing decision, we must first specify firm  $j$ 's

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<sup>44</sup>In a departure from Salop's model, we omit fixed costs without loss of generality.

demand. It is important to note that in this environment, competition is local. As depicted in Figure 11, when setting prices, firm  $j$  is only competing with its nearest neighbors on either side for making sales to consumers. Following Salop (1979), we posit that firms in sub-market  $d$  are charging an equilibrium price  $p_{eq}^d$  and firm  $j$  is deciding on whether to deviate, by charging a lower price, to steal customers from its neighbors. There is a consumer at some distance  $x$  from firm  $j$  (where  $x < \frac{1}{N^d}$ ) that is indifferent between buying from  $j$  and  $j + 1$  if<sup>45</sup>

$$g - p_j^d - tx = g - p_{eq}^d - t\left(\frac{1}{N^d} - x\right)$$

$$x = \frac{p_{eq}^d - p_j^d + t/N^d}{2t}$$

Since firm  $j$  faces the same cutoff consumer on the other side of the market, between  $j$  and  $j - 1$ , it has overall demand  $q_j^d = 2x \times S^d$ . It follows that the expression for firm  $j$ 's profit is  $\Pi_j^d = (p_j^d - c)q_j$ .

Solving first for the non-segregated sub-market ( $d_j = 0$ ):

$$\Pi_j^0 = (p_j^0 - c) \left( \frac{p_{eq}^0 - p_j^0 + t/N^0}{t} \right) \times \left( \theta + (1 - \theta)F(\bar{\eta}) \right),$$

and taking the first order condition yields:

$$\frac{\partial \Pi_j^0}{\partial p_j^0} = 0 = \left( \frac{p_{eq}^0 - p_j^0 + t/N^0}{t} \right) [\theta + (1 - \theta)F(\bar{\eta})]$$

$$+ (p_j^0 - c)(-1/t) [\theta + (1 - \theta)F(\bar{\eta})]$$

Note that here we are assuming that firm  $j$  treats  $\bar{\eta}$  (and thus  $S^0$ ) as exogenous:  $j$  is a “market size taker.” Since all the firms have the same cost function, it follows that they will price symmetrically so that  $p_j^0 = p_{-j}^0 = p_{eq}^0$ ,  $\forall j$ . Thus, we arrive at the equilibrium price in the non-segregated market:

$$p_{eq}^0 = c + \frac{t}{N^0}$$

Meanwhile, in the segregated sub-market ( $d_j = 1$ ):

$$\Pi_j^1 = (p_j^1 - c) \left( \frac{p_{eq}^1 - p_j^1 + t/N^1}{t} \right) \times (1 - \theta)[1 - F(\bar{\eta})]$$

Following the same approach as above, we find the equilibrium price in the segregated

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<sup>45</sup>We focus on consumers to one side of  $j$ , but the other side is symmetric since firms are equidistantly far apart and firms other than  $j$  are all assumed to be charging the same price.

market:

$$p_{eq}^1 = c + \frac{t}{N^1}$$

We can recover the firms' equilibrium profit in each of the sub-markets. Since all firms within a sub-market charge the same price, it follows that an arbitrary firm,  $j$ , faces demand  $q_j^d = \frac{1}{N^d}$ . If it enters the non-segregated market ( $d_j = 0$ ) its profit will be:

$$\begin{aligned} \Pi_j^{0*} &= (\bar{p}^0 - c) \left( \frac{1}{N^0} \right) \times S^0 \\ &= \left[ \left( \frac{t}{N^0} + c \right) - c \right] \left( \frac{1}{N^0} \right) [\theta + (1 - \theta)F(\bar{\eta})] \\ &= \frac{t}{(N^0)^2} [\theta - (1 - \theta)F(\bar{\eta})] \end{aligned}$$

Meanwhile, if it enters the segregated market ( $d_j = 1$ ) it will earn:

$$\Pi_j^{1*} = \frac{t}{(N^1)^2} (1 - \theta)[1 - F(\bar{\eta})]$$

Now, we turn to the sub-market entry decision of firm  $j$ . A firm will choose to discriminate against Black consumers and enter the segregated market if it is more profitable to do so. In other words, firm  $j$  enters the segregated market if:

$$\underbrace{\Pi_j^{1*}}_{\text{Segregated profit}} \geq \underbrace{\Pi_j^{0*}}_{\text{Non-segregated profit}} \geq 0$$

Substituting in for  $\Pi_j^{1*}$  and  $\Pi_j^{0*}$ , we get the following condition:

$$\frac{N^0}{N^1} = \sqrt{\frac{\theta + (1 - \theta)F(\bar{\eta})}{(1 - \theta)[1 - F(\bar{\eta})]}}$$

If we impose the additional assumption that  $\eta \sim U(0, 1)$  then  $F(\bar{\eta}) = \bar{\eta}$  and the expression simplifies considerably to:

$$\frac{N^0}{N^1} = \sqrt{\frac{\theta + (1 - \theta)\bar{\eta}}{(1 - \theta)(1 - \bar{\eta})}} \quad (3)$$

and if  $\bar{\eta} \in (0, 1)$ , it follows that

$$\frac{\partial(N^0/N^1)}{\partial\theta} > 0$$

Thus the main implication of the model is that a positive level of segregation can be a

stable equilibrium outcome even in the absence of prejudice on the part of firms. In this setting, where firms are pure profit maximizers facing White consumers with discriminatory preferences, as the Black population share increases, so will the ratio of non-segregated to segregated firms in the market. At the heart of our theoretical specification, we suggest that segregated businesses may have an incentive to serve Black customers on non-discriminatory terms if enough White customers are “missing” from the market. Put another way, relatively fewer White consumers represent fewer consumers who would not solicit the firm if it were to abandon discriminatory practices.

### ***V.B Isolating the Effect of Market Conditions***

The model described in Section A lends itself to a simple, intuitive empirical specification to test whether the racial composition of a local consumer market impacts firms’ decisions to discriminate. Equation 3 explicitly relates the ratio of non-discriminatory to discriminatory firms to the ratio of non-discriminatory to discriminatory consumers, bearing in mind that the consumer ratio is both a function of the number of Black and White consumers,  $\theta$  and  $(1 - \theta)$ , as well as the number of White consumers who are willing to shop in the non-segregated market,  $\bar{\eta}$ .<sup>46</sup> This equation implies that changes in the ratio of non-discriminatory to discriminatory firms may arise from changes in the market composition of consumers or in the propensity for White customers to discriminate.

If we assume the extreme case where that all White customers discriminate, then  $\bar{\eta} = 0$ . Under this assumption, taking the natural logarithm of both sides of equation 3 yields:

$$\underbrace{\ln\left[\frac{N^0}{N^1}\right]}_{\text{Ratio of Non-Discriminatory to Discriminatory Firms}} = \frac{1}{2} \underbrace{\ln\left[\frac{\theta}{(1-\theta)}\right]}_{\text{Ratio of Black to White Consumers}}$$

which guides our choice of estimating equation:

$$\ln(\text{firm ratio})_{ct} = \alpha_0 + \alpha_1 \ln(\text{B-W ratio})_{ct} + \rho_c + \delta_t + \epsilon_{ct}, \quad (4)$$

where  $\ln(\text{firm ratio})_{ct}$  is the natural logarithm of the ratio of non-discriminatory to discriminatory firms in county  $c$  in time  $t$  and  $\ln(\text{B-W Ratio})_{ct}$  is the natural logarithm of the ratio of Black-to-White consumers in county  $c$  in year  $t$ . As before, we capture time-invariant county-specific factors using county-level fixed effects,  $\rho_c$ , and time-varying factors that impact all counties in a given year equally using year fixed effects,  $\delta_t$ . In this case, the county fixed effects may account for county differences in the propensity for White consumers to

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<sup>46</sup>We refer to non-discriminatory consumers as those who purchase from firms who sell to the minority group, thus the minority group is automatically included in the count of non-discriminatory consumers.

discriminate, for instance variation in  $F(\bar{\eta})$  across counties. If the empirical specification in equation 4 perfectly aligned with the theoretical specification in equation B then the estimate of  $\alpha_1$  would be equal to 0.5.

Our primary focus is on how changes in the composition of consumers affects firms' choices to discriminate, but the model provides room for the possibility that  $\bar{\eta}$  was also changing during this time period. It is also easy to show that as long as Whites without discriminatory preferences do not derive any disutility from soliciting segregated firms the condition identified above holds. There is little narrative evidence of segregated firm owners speaking of potential new White customers they would gain if they were non-discriminatory. Since we are using exogenous shifts in the White population for identification, how can we be assured that individuals who perished in WWII had discriminatory preferences that were similar to the rest of the population?

White (2019) looks at whether veterans came to hold more liberal attitudes on racial segregation than their counterparts who did not serve. Using the Negro Political Participation Study to look more closely at the impact of White veteran status on racial attitudes, he finds that southern White veterans were “just as supportive of Jim Crow segregation as southern Whites who did not serve, and they were not any more sympathetic to the sit-in movement” (White, 2019, p. 93). WWII veteran status was not associated with liberalization in attitudes towards segregation or other policies to reduce inequities. Empirically, this implies that White casualties were removed from the same distribution of preferences as the rest of the White population— in expectation, areas with larger casualties would lose larger numbers of potentially discriminatory consumers than those with smaller casualties.

An additional concern with the specification presented in equation 4 stems from the observation that population change is almost certainly not exogenous. This is because people may endogenously relocate to areas with more or better amenities, but also because there could be unobservable factors that are simultaneously correlated with the population ratio and firm ratio. That is, over time there could be sorting of Black and White consumers in such a way that the population ratios and firm ratios are endogenously determined. For example, a potential omitted factor may be the level of discrimination in a local market which is likely to be positively correlated with the number of African American residents and negatively correlated with ratio of non-discriminatory to discriminatory establishments. In this case, the estimate of the relationship between the ratio of Black and White consumers and the firm ratio would be biased downwards. A further empirical issue that arises in the OLS specifications is the potential for measurement error to bias the coefficient estimates towards 0. Given the degree to which measurement error is often present in historical data, this may also be a concern for our analysis.

Here, we directly instrument the change in the Black-White ratio using the number of White casualties in World War II. This approach is closely aligned with the theoretical model. The first stage consists of regressing the Black-White ratio on the number of White casualties and in the second stage, the number of Green Book establishments is regressed on the predicted Black-White population ratio. In this sense, the IV methodology isolates the mechanism through which White casualties affect the number of Green Book establishments. Formally, the first stage is:

$$\ln(\text{B-W ratio})_{ct} = \theta_0 + \theta_1 \ln(\text{casualties})_c \times \text{post-WWII}_t + \mu_c + \nu_t + \epsilon_{ct}, \quad (5)$$

and the second stage is:

$$\ln(\text{firm ratio})_{ct} = \gamma_0 + \gamma_1 \widehat{\ln(\text{B-W ratio})}_{ct} + \omega_c + \vartheta_t + \nu_{ct} \quad (6)$$

Writing the first and second stage like this makes it apparent that the difference-in-differences specification in equation 1 is analogous the reduced-form of the IV specification.

The identifying assumption required for the IV specification is that the instrument only correlates with the outcome through its effect on the endogenous regressor. That is, our instrument,  $\ln(\text{casualties})_c \times \text{post-WWII}_t$ , must be correlated with the endogenous regressor,  $\ln(\text{B-W ratio})_{ct}$ , but uncorrelated with the error term associated with the firm ratio,  $\nu_{ct}$ . In all specifications we report  $F$ -statistics on the first stage regressions, they indicate that our instrument is indeed correlated with the endogenous regressor. Regarding the independence of our instrument and the error term, the arguments put forth about the validity of the exogeneity restriction in the difference-in-difference empirical framework also apply.

### ***V.C Using Formal Accommodations to Measure the Firm Ratio***

To compute the firm ratio in equation 4 requires knowledge of the number of segregated firms in a local market,  $N_1$ . While we do not have data on all segregated establishments during this time period, we have digitized data on the number of formal accommodations for the subset of counties that appear in the 1935 and 1948 US Censuses of Business.<sup>47, 48</sup> Figure 12 shows an example of the number of accommodations in counties in Alabama from the 1948 Census of Business. From these variables, we construct the number of discriminatory, or

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<sup>47</sup>Whereas the 1948 Census of Business lists motels explicitly, the 1935 publication is not explicit about the inclusion or exclusion of motels in the definition of hotels. However, it is our opinion that the 1935 definition would have included both categories of establishment as certain types of establishments are explicitly excluded (boarding houses, Y.M.C.A.s, and tourist camps, for example). Moreover, the term “motel,” a portmanteau arising from motor and hotel, was quite novel at the time as it was coined in 1925 (Jackson, 1993).

<sup>48</sup>Strictly speaking, in 1935 statistics on the hotel industry were published separately from other services trades, but they were included in the services trades volumes of subsequent Census of Business publications.

segregated, firms using the following formulas:

$$\begin{aligned} N_{1_{c,t}<1942} &= N_{c,1935} - N_{0_{c,t}} \\ N_{1_{c,t}>1942} &= N_{c,1948} - N_{0_{c,t}}, \end{aligned}$$

where we use the number of Green Book establishments in county  $c$  in time  $t$  to compute the number of non-discriminatory establishments,  $N_{0_{c,t}}$ , and the county-level counts of the total number of accommodations from the Census of Business as our measure of all hotels,  $N_{c,t}$  for  $t \in \{1935, 1948\}$ . The difference between the two gives a measure of discriminatory firms,  $N_{1_{c,t}}$ .

Focusing on formal accommodations may be advantageous for several reasons. Foremost, accommodations (both formal and informal) are the most frequently listed type of establishment in the Green Books and the main informational problem that the guides aimed to solve for African American motorists was where to find overnight lodging. Consequently, we believe accommodations to be more accurately surveyed than restaurants, beauty and barber shops, and other types of businesses.

To further stress the representativeness of Green Book hotels, Figure 13 compares the number of Green Book hotels in 1955 to another source of information on non-discriminatory hotels, the number of hotels listed in the Wisconsin Black Business Directory (WBBD) in 1955. While the WBBD focussed primarily on businesses in the state of Wisconsin, it also provided a nation-wide list of hotels that were friendly to African American travelers. We show these correlations by state in panel (a) and by city in panel (b). Each plot also displays a 45-degree line. Observations above the line have more Green Book hotels than WBBD hotels and those below the line have more WBBD hotels than Green Book hotels. Here, we see that the vast majority of states and cities have more Green Book hotels than WBBD hotels, which supports that the Green Book listings provide a reasonable snapshot of the hotel market open to African American clientele.<sup>49</sup>

Equally important, hotels were firms that discriminated at the extensive margin by definition—hotels discriminated by not providing lodging to Black customers, as opposed to second-class service that other business types could employ.<sup>50</sup> Therefore, increases in non-

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<sup>49</sup>The Online Appendix displays the city-level correlations between Green Book hotels and WBBD hotels with circles weighted by frequency, as well as state-level correlations between Green Book hotels in 1938 and Census of Business black-owned hotels in 1935.

<sup>50</sup>Hotels were seen as an area of discrimination that could “taint” Whites with Black association even though lodging is separate by design. For example, in *Civil Rights: Miscellaneous Proposals Regarding the Civil Right of Person Within the Jurisdiction of the United States Before the H. Comm. on the Judiciary, 88th Cong. 1919* Edgar S. Kalb, Manager of the Beverly Beach Club said “I think if I did not want to go into a hotel that had mixed patronage, that was a publicly owned hotel, that I certainly should have the right to go in a privately operated place that furnished and solicited only those that I chose to associate

discriminatory hotels represent a clear and genuine increase in access to non-discriminatory services for Black consumers at the extensive margin.<sup>51</sup> Lastly, as businesses in the local community, hotels faced pressure to adhere to local discriminatory norms. At the same time, they should be the least likely to respond to local market conditions since they primarily serve customers outside of the local area. Historically, however, Whites tended to adhere to local discriminatory norms when traveling to places with extensive racial segregation in services.<sup>52</sup> As such, focusing on hotels acts as a strong test of the model in that the estimates from these specifications can be considered as lower bounds on the impact of the market composition on the degree of segregation in a given market.

In our empirical analysis we proxy for the consumer ratio with the county-level ratio of the Black-to-White populations. This leads to an important question regarding the relevance of the local county population as the appropriate consumer base for formal accommodations in a given county. One way in which the local consumer ratio would proxy for the relevant consumer ratio is if the potential market sizes of both discriminatory and non-discriminatory formal accommodations in a given county are proportional to the Black and White populations in said county. Evidence based on the contemporary relationship between county population and the size of the formal accommodation sector suggests that this is likely the case. In 2018, the raw correlation coefficient between population and number of hotel and motel establishments at the county level was 0.9055.<sup>53</sup> Table 7 presents estimates of the elasticity of the number of hotels and motels to county population, conditional on state fixed effects. The point estimate in column (2) indicates that a 1 percent increase in the population is associated with a 0.67 percent increase in formal lodgings. This is evidence that, in a setting where the entire accommodations market is non-discriminatory, the demand for hotels is proportional to the county population.<sup>54</sup>

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with.”

<sup>51</sup>Unfortunately, the only category with a comparable number of listings to formal accommodations is eating and drinking establishments. We cannot discern formal places of business from informal ones in this category. This is an important distinction. Because the Census of Business only enumerates the former, including informal establishments, which were numerous at this time, in the Green Book listings count would overstate the share of non-discriminatory business establishments in a county, which could be directly related to population shares and confound results.

<sup>52</sup>The history of entertainment, specifically music troupes and college football, provides suggestive evidence that Whites did not attempt to upset local norms. For music groups, integrated bands would require Black members to sleep on the bus since they were not allowed inside of the hotels. In the case of college football, integrated teams sat their Black players when playing segregated football teams. Academic and scientific meetings also faced these issues when scheduling meetings in cities with discriminatory hotels.

<sup>53</sup>Authors’ calculation using the estimated county population in 2018 (U.S. Census Bureau, 2020b) and the the establishment count of hotels and motels (U.S. Census Bureau, 2020a). Note that only counties with at least 3 establishments are included in the CBP public data tables (and hence the aforementioned calculation).

<sup>54</sup>This does not imply that Black and White customers had similar travel experiences. For example, a

We suggest that this is likely to hold for the White and Black sub-markets during our period of study and historical survey data supports this notion. In the spring of 1958, the University of Michigan’s Survey of Consumer Attitudes and Behavior asked a representative sample of American households questions about their travel intentions as well as demographic information that allows for a comparison across White and Black households. We generate a binary outcome variable that equals one if a household reported considering visiting their friends and family when planning a trip.<sup>55</sup> Column (1) in Table 8 compares the mean responses across Black and White households.<sup>56</sup> The coefficient estimate labeled “Black respondent” in the table captures the difference in means across the two groups. We do not find statistically significant evidence of differences across Black and White households in the likelihood of considering family and friends when planning trips. Roughly 30% of White and Black households report traveling to visit friends or family. The fact that we do not find racial differences in the propensity to travel for this reason suggests that the market size proportionality applies equally to both the Black and White tourism markets.

Column (2) of Table 8 also uses the University of Michigan Spring 1958 Survey of Consumer Attitudes and Behavior to construct an indicator for whether a household is planning to travel less than 200 miles on their trip. We regress this variable on an indicator for whether the respondent is Black, as well as a constant and state fixed effects. Again, roughly 30% of respondents said that they would be traveling a short distance on their upcoming trip and we do not find a statistically significant difference in how White and Black households responded to this question. Given that formal accommodations appear to be proportionally related to the local consumer market and that many people do travel relatively short distances, we also present IV results for formal accommodations where we define the consumer ratio based on the own-county and neighboring-county populations and present results accordingly.<sup>57</sup>

Lastly, it is intuitive to think that the hotel market itself could be bifurcated. Hotels in more remote areas might be less inclined to be non-discriminatory than hotels in larger centers or hotels situated near thoroughfares that served through-travelers where non-discriminatory practices would receive less scrutiny. While this argument is reasonable, the market for hotels at the time was markedly discriminatory. Large tourist destinations such as the Las Vegas Strip were completely racially discriminatory well into the 1960s,

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Black traveler from Washington, D.C. to Miami had an average of 141 miles between hotels that would serve them, several orders of magnitude above Whites.

<sup>55</sup>See the Online Appendix for more detail on the specific survey questions and the creation of these binary variables.

<sup>56</sup>Formally, we estimate the regression equation  $y_i = \alpha + \beta \text{race}_i + \epsilon_i$ , where  $y_i$  is an outcome variable. In this case, it is an indicator for whether the respondent considers friends and family in planning trips.

<sup>57</sup>Using ArcGIS, we define county  $i$ ’s neighboring counties as all adjacent counties.

even though they regularly featured African American performers who were not allowed to gamble nor stay at the hotels themselves. In the Supreme Court case *Heart of Atlanta Motel vs. USA* (1964), argued just three months after the Civil Rights Act of 1964 was signed into law, the court noted that the discriminatory hotel suing to invalidate Title II of the Civil Rights Act was large (more than 200 rooms), served more than 75% out-of-state customers, advertised in national media, purchased more than 50 billboards throughout the state, and was located near the intersection of two interstates. On the whole, the narrative evidence is decidedly against the argument that a bifurcation of hotels existed with respect to serving out of state guests and the extent of racial discrimination. As further evidence, large hotel groups in downtown areas were willing to forgo substantial and lucrative convention contracts to maintain racial discrimination, consistent with firm owner beliefs of large revenue losses from becoming non-discriminatory.<sup>58</sup>

### ***V.D Empirical Estimates of the Theoretical Predictions***

The objective of our analysis in this section is to understand how changes in the composition of consumers in a local market affects the incentives of businesses in that market to serve clientele from the minority group. To test this *market conditions hypothesis* in a way that is most closely related to the theoretical model, we estimate the relationship between the ratio of non-discriminatory to discriminatory firms to the composition of consumers in a given market. As discussed in Section C, we can only compute this firm ratio for the subset of formal accommodations in our Green Book data. We focus on the sample of counties that had at least one Green Book establishment in 1939.<sup>59</sup> The justification for restricting the estimation sample in this way is that it encompasses the locations that Black motorists were interested in learning about. Thus, the Green Book listings will better reflect local access to public accommodations in these places. Including counties that were not paid close attention by the travel guide will obfuscate the relationship between the Black-White population ratio and the ratio of Green Book to non-Green Book formal accommodation establishments. Note that this is not a mechanical elimination of all zeros; counties that had no hotels or motels in the 1939 edition of the guide but had another type of establishment listed—usually a tourist home or another type of informal lodging—are included in this

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<sup>58</sup>From the *Heart of Atlanta Motel* case it was revealed that “Dallas, Texas for example, found that it could have benefited very much from the voluntary opening of its hotels to conventions where there was no segregation. The Atlanta Convention Bureau, within one day after 14 Atlanta hotels desegregated, received commitments – not fillers but commitments, from organizations expecting over 3,000 delegates which would not have gone to Atlanta if segregation were continued to be practiced. Again, New Orleans found the – an American Legion Convention expecting 50,000 people transferred to another city because New Orleans could not guarantee equal public accommodations.” 379 US 241 (1964), Argued October 4, 1964.

<sup>59</sup>Our results are robust to considering all counties that ever appeared in the Green Books.

sample.

We begin our analysis of the hotel industry by verifying that the difference-in-differences results in equation 1 hold when conditioning on the total number of hotels in a given county. These results are found in Table 9, where the first three columns display results using all Green Book establishments as the dependent variable and the last three columns display results using formal accommodations as the dependent variable. For both total establishment counts and formal accommodations, we find that conditioning on the total number of formal accommodations has a negligible impact on the treatment effect.

Table 10 displays OLS estimates of the relationship between the firm ratio and the population ratio. As discussed previously, this specification does not account for the endogenous nature of population change. The first three columns display these results using own-county consumer ratios and the next three columns use own- and neighboring-county ratios. Column (1) suggests that a 1% change in the Black-to-White population ratio is associated with a 0.4% change in the non-discriminatory to discriminatory firm ratio for the hotel industry. Column (2) separates the Black-to-White population ratio into the Black population and the White population, where we see, as expected, that the Black population is positively correlated with the firm ratio and the White population is negatively correlated with the firm ratio, although this coefficient estimate is not statistically significant.<sup>60</sup> Column (3) uses the interaction of the inverse hyperbolic sine of White casualties with a post-WWII indicator in lieu of the White population. Reassuringly, this coefficient estimate is the opposite sign but same magnitude of the coefficient estimate on the White population in column (2). Columns (4)-(6) repeat this pattern using own and neighbor county populations and White casualties. These results do not differ substantially from those in the first three columns.

The results in Table 10 show that there is a positive correlation between the firm and population ratios, as would be predicted by the theory, but using a specification that does not account for the endogenous nature of population change. To address this endogeneity, we use the number of White casualties in WWII interacted with a post-WWII indicator variable to instrument for the Black-White population ratio. Table 11 presents the first stage results for this specification where we regress the Black-White population ratio on the treatment indicator. All variables are transformed using the inverse hyperbolic sine function, so that coefficient estimates can be roughly interpreted as elasticities. As before, column (1) presents the results from our preferred difference-in-differences specification that includes county and year fixed effects. In column (2) we add state  $\times$  year fixed effects and in column (3) we estimate the specification in changes, using the number of White casualties

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<sup>60</sup>These results differ slightly from the theoretical predictions, in that the theory predicts that the magnitude of the coefficients estimates should be equal to one-half.

instead of the difference-in-differences treatment variable.

Our treatment effect varies between 0.011 and 0.022 depending on the specification used and all coefficients are estimated precisely. Taking the lower bound of these estimates would imply that a 10% increase in White casualties is associated with a 0.1% higher Black-to-White population ratio in the years following World War II. Columns (4)-(6) repeat the same pattern in specifications as columns (1)-(3), but where we use own and neighbor counties in our variable construction. These estimates are almost identical to the estimates using own county values. The main takeaway from this table is that across all specifications our instrument is correlated with the observed Black-White population ratio in an economically meaningful way.

The IV results are presented in Table 12 where, again, the first three columns use own county to define population and casualty variables and the next three columns use own and neighbor values. Each panel reports the  $F$ -statistics on the associated first stages from Table 11, which suggest that our instrument is strong across all specifications. Columns (1) through (4) regress the ratio of non-discriminatory to discriminatory firms on the Black-to-White population ratio, where we use the difference-in-differences specification as an instrument. Columns (5) and (6) use the change in the ratio of non-discriminatory to discriminatory firms between 1940 and 1950 as the dependent variable and the change in the Black-White population ratio as the independent variable, which we instrument with the number of White casualties. All variables are transformed using the inverse hyperbolic sine function and all specifications use the sample of counties that had at least one Green Book establishment in 1939.

Column (1) displays the OLS estimate of this specification which suggests that a 1% increase in the Black-White population ratio is associated with a 0.4 % increase in the non-discriminatory to discriminatory firm ratio. Although this coefficient is not statistically significant, to put the magnitude of the estimate in perspective, the mean Black-to-White population ratio in 1940 in this sample of counties was 0.236, with the smallest value being 0 and the largest, 2.6. A 1% increase in the Black-to-White population ratio at the mean would be a change from 0.236 to 0.238. Anne Arundel, Maryland is the county in our sample with the closest Black-to-White population ratio to the mean value in 1940 with 22,439 Black residents and 94,800 White residents. At these values, a 1% increase in the Black-to-White population ratio could arise either because of an increase of 123 Black residents or a decrease of 518 White residents. An advantage of using the IV specification is that it isolates the change in the Black-to-White population ratio to the portion that is explained by the casualties in World War II, which are more likely to be exogenous to pre-war county characteristics. Applying the IV in column (2) leads to a larger coefficient estimate that is

now precisely estimated and suggests that a 1% increase in the Black-to-White population ratio causes a 1.6% increase in the ratio of non-discriminatory to discriminatory firms. We again suspect that the difference in the magnitude of the OLS and IV estimates are the result of both omitted variable bias and measurement error biasing the OLS coefficients towards 0 without affecting the IV estimates.

It could be the case that the IV results are driven by outliers. Figure 14 shows the coefficient estimates and 95% confidence bands of the difference-in-differences specification when we sequentially trim counties from the top and bottom of the distribution of white WWII casualties. Once again, the magnitude of our coefficient estimate is relatively stable, while the standard errors increase slightly as we trim more from the sample.

Returning to Table 12, we add state  $\times$  year fixed effects in columns (3) and (4), which lead to a smaller OLS estimate and a larger IV estimate. The impacts of measurement error will be exacerbated by the addition of more levels of fixed effects, which is likely why the OLS estimate is smaller in magnitude than in column (1). Again, the IV estimate is economically meaningful and precisely estimated. When we estimate the specifications using the change in the firm ratio and the change in the population ratio in columns (5) and (6), the OLS results suggest that a 10 percentage point change in the Black-White population ratio between 1940 and 1950 is associated with a 0.3 percent change in the non-discriminatory to discriminatory firm ratio during this time period. Instrumental variable estimates increase the magnitude of this coefficient estimate to 2.1 percent, in line with the IV specifications that use the difference-in-differences structure. Once again, OLS estimates are imprecisely estimated, while IV estimates are precisely estimated. Across all specifications, the IV results suggest that the OLS estimates understate the magnitude of the effect of population change on the firm ratio, but that the direction of coefficient estimates is consistent with the notion that a higher Black-White population ratio is associated with a higher ratio of non-segregated to segregated firms.

We can also test for heterogeneous effects by the overall level of market competition. Early work in industrial organization stressed the importance of the number of incumbent firms for competitive conduct (see, e.g., Bresnahan and Reiss (1991)). In our setting segregated firms may have less of an incentive to serve Black clientele when there are a larger number of alternatives for White consumers. Conversely, in areas with fewer competitors, Whites with discriminatory preferences would have less consumer power. Under the market conditions hypothesis, firms discriminate in response to consumer preferences, as a result, desegregation may be less costly in markets with fewer competitors. In this sense, testing whether the relationship between the ratio of Black and White consumers and the ratio of non-discriminatory to discriminatory hotels varies by market power provides an additional

check on the market conditions hypothesis since firms operating in a more oligopolistic market face a smaller potential revenue loss from defecting White customers.

In Table 13 we show that this pattern is present in our setting using a plausible measure of market power. We use a measure that more accurately represents the alternatives for a discriminatory White consumer: quantiles of the 1935 distribution of hotels divided by the White population.<sup>61</sup> We see that the entire market response to changes in the Black-White consumer ratio is driven by firms located in counties the bottom third of the market power distribution, the areas with the fewest number of competitors.<sup>62</sup> These results are consistent with the notion that market power plays an important role in a firm’s willingness to desegregate in response to changes in the market composition of consumers. It is also consistent with the narrative of owners who were primarily worried about defection of White customers, thereby providing additional evidence in support of the market conditions hypothesis. The results in Table 13 are also inconsistent with the bifurcated market for hotels discussed earlier. Areas with substantial tourism or business travel would have more per capita hotels than others, and yet these areas are less responsive to population shifts than areas with fewer hotels per capita.

The results in this section are consistent with the market conditions hypothesis, wherein business owners who faced a decline in their White consumer base began opening their establishments to Black consumers. In particular, by using the number of White casualties from World War II as an instrument for the Black-to-White population ratio, we are able to isolate this as a potential channel through which World War II impacted the desegregation of firms in America. That being said, other theories relating to social change and income growth among the African American population provide potential alternative explanations for our findings. In the following section we evaluate in greater detail an alternative set of candidate hypotheses.

## VI. CONSIDERING ALTERNATIVE EXPLANATIONS FOR THE GROWTH IN GREEN BOOK ESTABLISHMENTS

In addition to its effect on the racial composition of local markets that we identified in the previous sections, there is a substantial literature spanning history and political science that points to the Second World War having important effects on the political attitudes and organization of Whites and Blacks as they pertained to matters of segregation and

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<sup>61</sup>In the Online Appendix we also show that there is a monotonically decreasing relationship between the size of the market conditions effect and the number of total hotels, which we view as an alternative measure of market power.

<sup>62</sup>All columns present IV estimates that include county and year fixed effects.

Civil Rights more generally (Brooks, 2004; Ward, 2011; White, 2019). There is also a body of work documenting the impact of World War II on the economic well-being of African Americans (Margo, 1995; Collins, 2001; Ferrara, 2019). Both of these forces could contribute to our empirical finding that WWII mobilization had a positive causal impact on the level of public accommodations available to the Black population.

We relate both of these possibilities to the model framework laid out in section A. We first consider the role of political activism itself as being related to the provision of non-discriminatory businesses. Local Black political activism could have provided external pressure that the market would have responded to, above and beyond the role of market composition, or activism itself could be related to higher levels of White casualties as there would be fewer prime age White men to serve as resistance to Civil Rights activism. Second, we consider the hypothesis put forth by Ferrara (2019) that White casualties led to occupational upgrading among local Black residents, such that the increase in non-discriminatory businesses was a response to increased relative Black earnings as opposed to population shares. The effects of improved economic well-being would operate through changing labor market conditions faced by Black workers, as many filled positions that had previously been occupied by Whites who were deployed. Specifically, an amelioration in labor market outcomes could result in an increase in demand among African Americans, and thus an increase in the number of non-discriminatory establishments.

Drawing on the historical literature and supplementary data sources, we provide a discussion of each hypothesis in sequence. We find that neither substantively alters the central results. Additionally, while we view our discussion of White (2019)'s work on changes in White veteran's perception of African Americans as sufficient evidence that White attitudes were not driving changes in firm-level segregation during this time period, we supplement this narrative with additional empirical work in the Online Appendix.

## ***VI.A The Direct Effect of Black Political Activism***

Black political activism around Civil Rights, and public accommodations specifically, was an important feature of post-War political activism.<sup>63</sup> Comprehensive data on all types of

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<sup>63</sup>In the context of our theoretical framework, this could lead to a leftward shift in the distribution of  $\eta$  insofar as Black political activism affected the attitudes of Whites. Much of Black political activism of the time was grounded in Black involvement in World War II. The primary idea being that Black veterans who fought to end fascism abroad led a movement that sought to end segregation at home. Although the army remained largely segregated through the end of WWII, Black participation in the war was not trivial. By 1947, nearly 1.2 million African Americans had served in the armed forces, yet they continued to face rampant discrimination at home. This was particularly true in the South, and acts of protest against segregation among Black veterans became commonplace; however, examples of such dissatisfaction outside the South also occurred. James G. Thompson's famous Letter to the Editor of the Black-owned newspaper, *Pittsburgh Courier*, provides one such example. Thompson expressed his confliction over serving

political activity at the local level is unavailable, but we can test for the presence of national organizations, such as the NAACP, which was a prominent organization with local chapters in a number of areas at the time. We test whether our main results hold when controlling for the growth of NAACP chapters.<sup>64,65</sup> Most important, being a large national organization, the proxy of NAACP offices for nationally-linked Black political activism does not require us to restrict our analysis to the South and can further exploit the pre- and post-war presence of NAACP offices, which is not available for many other Black Civil Rights organizations with national footprints at the time.<sup>66</sup>

Table 14 displays the results of this exercise of including NAACP local presence in the main difference-in-differences specification. Column (1) shows our main difference-in-differences specification, replicating our main results for the sample of counties that have NAACP data. Column (2) controls for the number of NAACP chapters or branches, where we use the 1941 level of NAACP chapters for pre-1942 years and the 1957 level of NAACP chapters for post-1946 years. Column (3) uses our indicator for whether a county had at least one NAACP chapter. Reassuringly, the addition of these controls does not affect the coefficient estimate of interest.

We perform a similar exercise in columns (5) through (7) of Table 14, restricting to formal accommodations, and estimating the relationship between the firm ratio and the Black-to-White population ratio. Column (4) presents the baseline OLS estimates, without conditioning on any of our possible confounding factors and column (5) presents the associated IV specification where we use the number of White casualties in World War II as an instrument for the population ratio. Column (6) adds a control for the change in the number of NAACP chapters between 1940 and 1950, again using the 1941 NAACP value for 1940 and the 1957 value for 1950. As with our OLS specifications, the inclusion of this control does not affect our treatment effect. The results in Table 14 show that our main specifications are robust to the possibility that proxies for Black political activism lessened the market composition effects on desegregation. The next section evaluates the possibility that an increased economic well-being of African Americans led to an increase in demand

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for a country in which he was denied the full rights of a citizen. Thompson's letter spurred the *Double V Campaign*—referring to African American's participation in victory over the Axis powers, as well as in the fight for equality at home—a campaign that eventually became national in nature and that many claim played an integral role in laying the foundation of the Civil Rights Movement (Finkle, 1973).

<sup>64</sup>The data for NAACP chapters comes from the Mapping American Social Movements Project (Estrada and Hermida, 2020) and can be accessed from: [http://depts.washington.edu/moves/NAACP\\_database.shtml](http://depts.washington.edu/moves/NAACP_database.shtml).

<sup>65</sup>In the Online Appendix we also show that the spread of NAACP chapters is empirically related to Black enlistment, thus providing additional rationale for this empirical check.

<sup>66</sup>For example, the Student Non-Violent Coordinating Committee (SNCC) was founded in 1960 and the Southern Christian Leadership Conference (SCLC) was founded in 1957.

for public accommodations.

## ***VI.B Changes to Demand from Black Consumers***

An alternative explanation to the market conditions hypothesis is that our findings are due to an increase in African American demand for consumer goods and services that resulted from occupational upgrading among African Americans induced by WWII. Ferrara (2019) shows that African Americans filled semi-skilled positions previously held by Whites that arose as a result of labour shortages stemming from the mortality of semi-skilled White soldiers.<sup>67</sup> Although this particular hypothesis is not nested within our stylized model, if occupational upgrading led to an increase in incomes for African Americans, this could have resulted in higher demand for goods and services offered by non-discriminatory places of business, effectively making integration more attractive for business owners.

We examine the possibility that occupational upgrading is behind the increase in non-discriminatory accommodations by making use of the World War II mortality data by skill level. We estimate a specification that takes the following form:

$$GB_{ct} = \alpha + \sum_{s \in \text{skills}} \left[ \beta_s \text{casualties}_{sc} \times \text{post-WWII}_t + \gamma_s \text{casualties}_{sc} \right] + \delta_t + \epsilon_{ct}, \quad (7)$$

where we now include a separate variable for the number of White casualties of each skill level, as well as the interaction of these casualties with an indicator for the post-WWII period. The skill levels,  $s$ , include unskilled, clerical, semi-skilled, agriculture, skilled, professional, and services. Ferrara (2019) shows that African American workers filled the labor shortages induced by the White casualty rate among semi-skilled workers and finds no effect for low-skilled and high-skilled positions.

Figure 15 displays the coefficient estimates on each of the skill  $\times$  post-WWII interactions in equation 7. The effect of White casualties among semi-skilled workers on Green Book establishments in the post-WWII period is close in magnitude to 0 and not statistically different from 0. This suggests that while African Americans may have been filling these positions, as was found by Ferrara (2019), this is not the primary channel behind the growth in the non-segregated market.

That being said, the effect of White deaths among those in the service industry warrants further discussion. According to the Dictionary of Occupational Titles from the United States Department of Labor (1939), the service industry includes domestic service occupations, personal service occupations, protective service occupations (police, firemen, etcetera), and building service workers and porters. Since aside from the protective service occupa-

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<sup>67</sup>More generally, Black socioeconomic progress leading up to the Civil Rights Movement has also been discussed extensively in the existing literature (see, e.g., Collins (2000)).

tions, the majority of these jobs are likely to be the types of establishments listed in the Green Books, particularly hotels; this finding may be in line with the change in attitudes hypothesis. If African Americans began working in hotels where they were not allowed to stay, they may have pushed for more equality in the hotel industry. Alternatively, the presence of more Black workers may have led to a change in attitudes among Whites. This is also consistent with Ferrara’s (2019) finding that after Blacks filled semi-skilled positions, Whites working in similar positions, presumably in proximity to them, were more likely to report having an interracial friendship, live in a mixed-race area, and to favor integration, mixed schools, and mixed churches.

In Table 14 we perform an additional check related to the increase in Black economic well-being during World War II. Here, we condition on the county-average of Black occupational income scores and the percent of Black residents aged 25-65 who were employed. These variables come from the 1940 and 1950 1% Census samples from IPUMS (Ruggles et al., 2020). A limitation of using these data is that county codes are only present for a limited number of counties in the 1950 files, so we dummy out counties with missing data. Results for the main difference-in-differences specification, conditional on these measures of economic well-being are presented in column (4) and for the IV specification they are found in column (8). The difference-in-differences estimate remains stable compared to the main specification in column (1). While smaller than the main IV specification in column (6), the estimate of interest in column (8) is still economically and statistically significant. These results again suggest that the market conditions hypothesis cannot be explained away by the increase in Black economic standing during World War II. Even controlling for changes in Black economic position, there is still a consumer market shares impact on the provision of non-discriminatory services.

## VII. CONCLUSION

World War II marked the beginning of a period of unprecedented social change in America. In this paper, we quantify the extent of this change in relation to access to public accommodations that served African American clientele by making use of a novel dataset that describes the number of non-discriminatory public accommodations listed in the *Negro Motorist Green Books*. We use this dataset to study the determinants of firms’ decision to discriminate against potential customers that belong to a minority group. We suggest that the composition of consumers in a local market plays an important role in determining the number of firms who agree to serve the minority clientele. We formalize this notion in a stylized model in which consumer segregation arises in equilibrium; not as a result of firm’s forgoing profits, but due to firms’ decisions in the face of majority group customers that

harbor a distaste for consuming alongside members of the minority group. In particular, our model aims to reflect the reality of segregation in public accommodations throughout much of the United States before the passage of the Civil Rights Act in 1964 and to better understand the role of consumer discrimination in firms' decisions to serve African American customers during this period.

Motivated by the theoretical model's predictions that an increase in the ratio of Black-to-White consumers will lead to less discrimination in public accommodations, we relate the change in Green Book establishments to the decline of White consumers induced by mortality in World War II. Using counties as the unit of observation, we identify the causal impact of an exogenous change in the White population, and thus the racial composition of counties, on the number of establishments listed in the Green Books using a difference-in-differences methodology with the level of White WWII mortality as the source of identifying variation. To further isolate the impact of changes in the composition of consumers, we use WWII mortality as an instrument for the change in the Black-White consumer ratio for the hotel and motel industry.

In addition to contributing to a greater understanding of the impact of WWII on U.S. society and outcomes for Blacks, in particular, we shed light on the determinants of discrimination in public accommodations before the Civil Rights Act. Our findings support an interpretation that among the industries captured in the Green Books, local retail and service markets were quite responsive to changes in the racial composition and discriminatory preferences of local consumers. In particular, this highlights the role of consumer discrimination in supporting a segregated equilibrium and provides empirical evidence in line with [Wright \(2013\)](#)'s hypothesis that profit-maximizing firms practiced segregation on the basis of White consumer discrimination. It further provides evidence that helps to answer a longstanding question in sociology, legal studies, and political science: namely, would desegregation have occurred without the legislation of the Civil Rights Act of 1964? Our results suggest that market conditions certainly influenced firm behavior but that full equal access to services would not have been possible without legal intervention.

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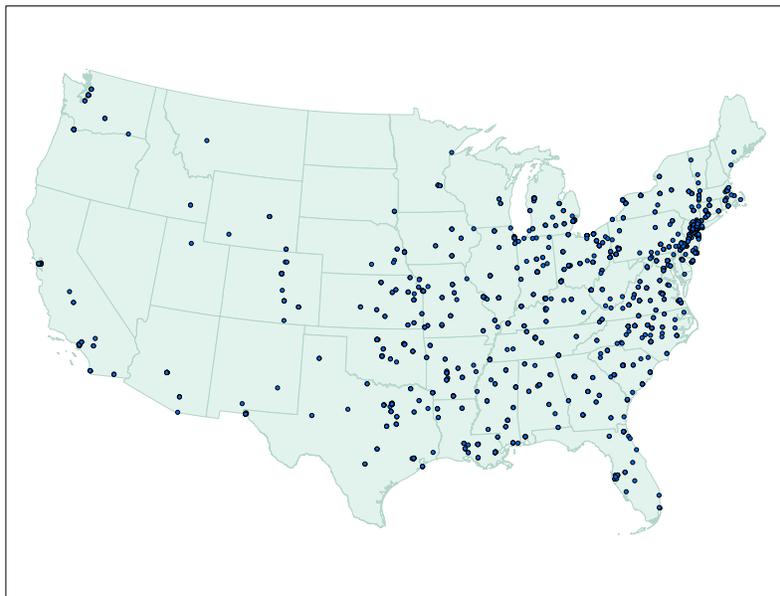
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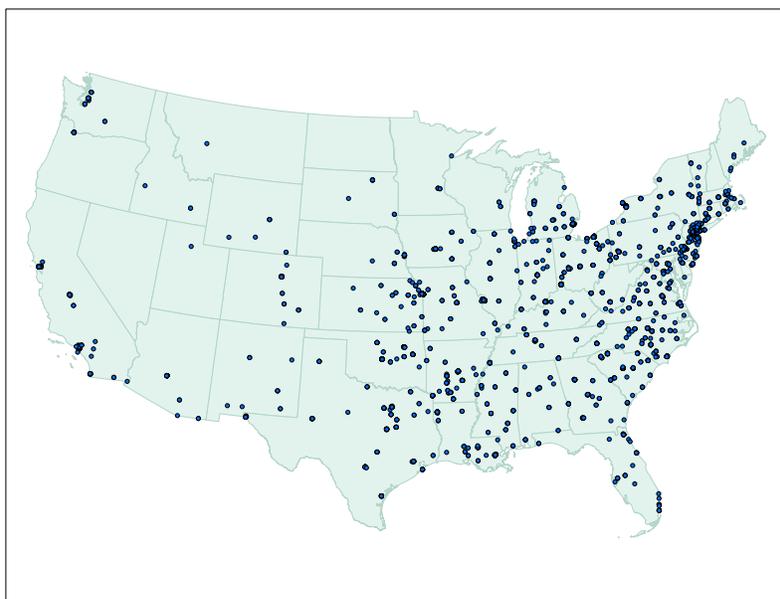
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## A. FIGURES



(a) Establishments in 1941



(b) Establishments in 1947

Figure 1: The location of Green Book establishments in 1941, the year the United States entered World War II, and 1947, the first year the Green Books resumed publication after World War II ended.

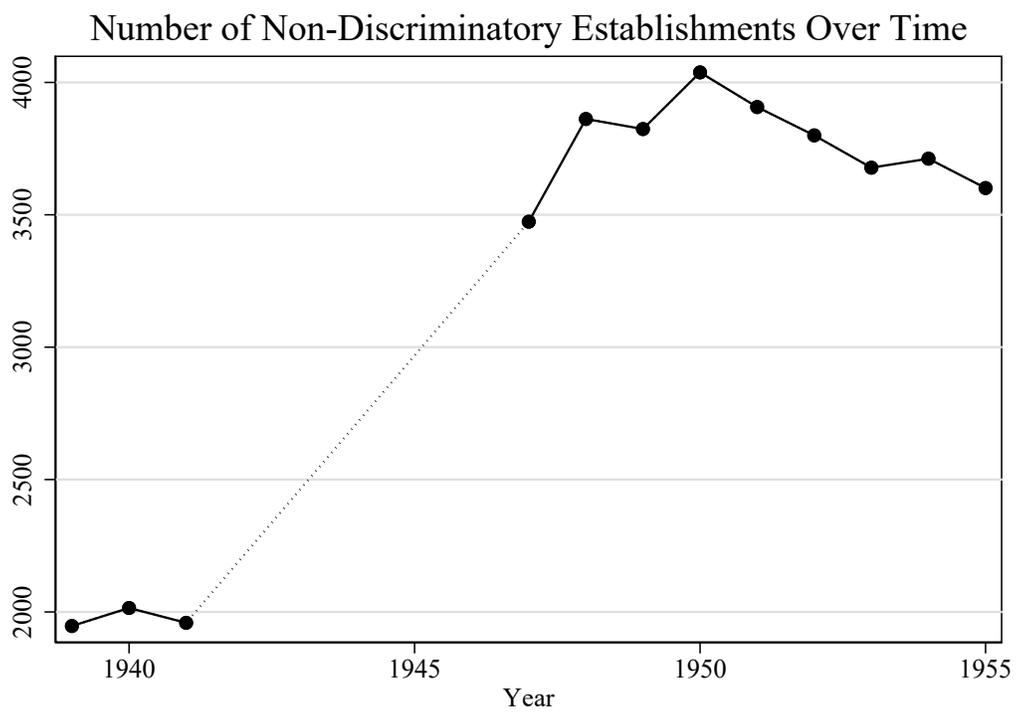


Figure 2: The total number of Green Book establishments over time.

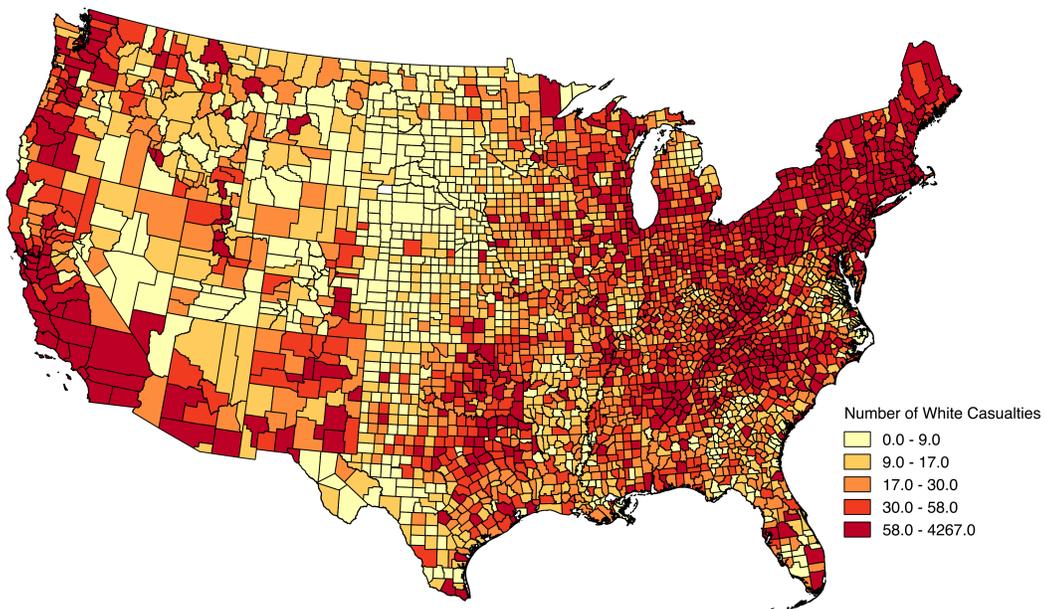


Figure 3: Geographic variation in the number of white casualties in World War II.

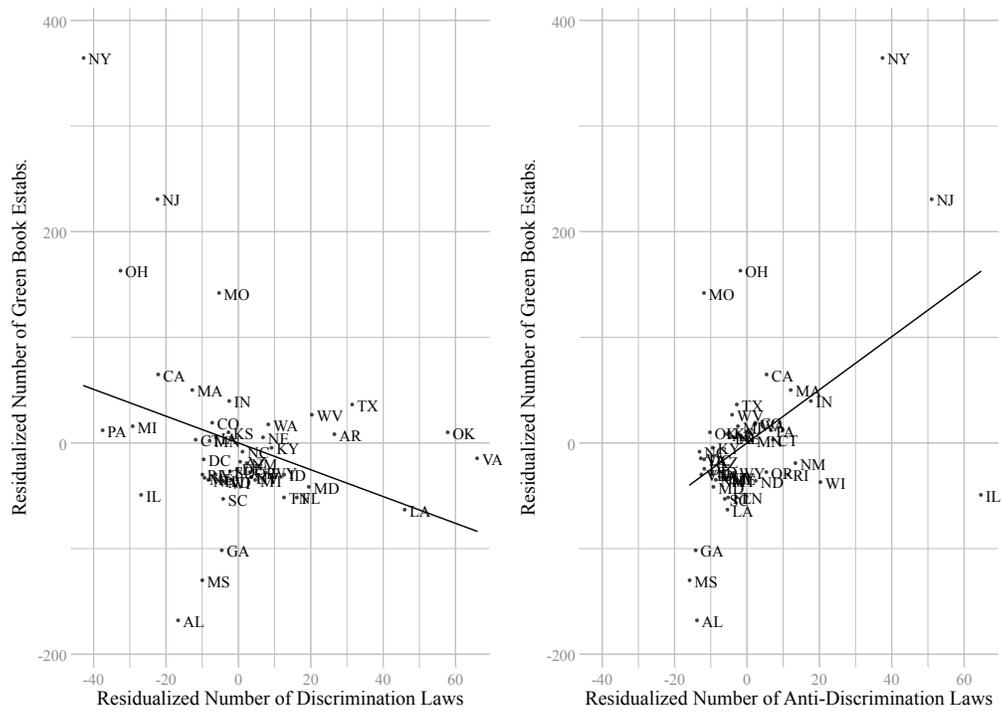


Figure 4: Correlation between the number of Green Book establishments and the number of laws upholding discrimination by 1950 (left panel) and the number of anti-discrimination laws by 1950 (right panel). All variables have been residualized using the Black population. Discrimination and anti-discrimination laws come from Murray (1950).

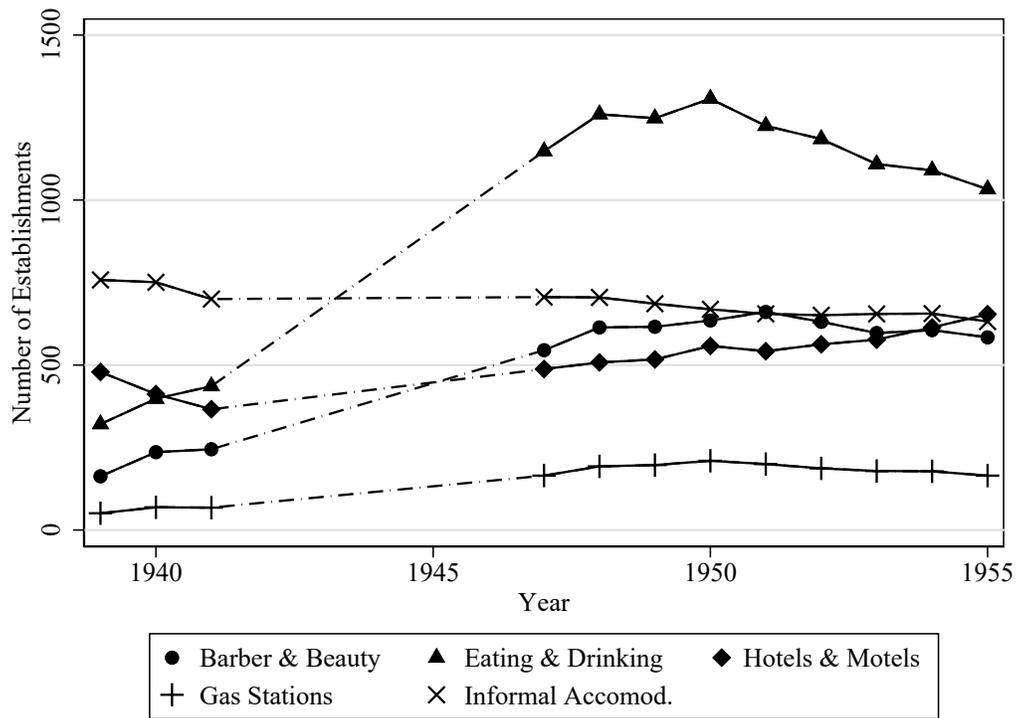


Figure 5: The total number of Green Book establishments by industry over time.

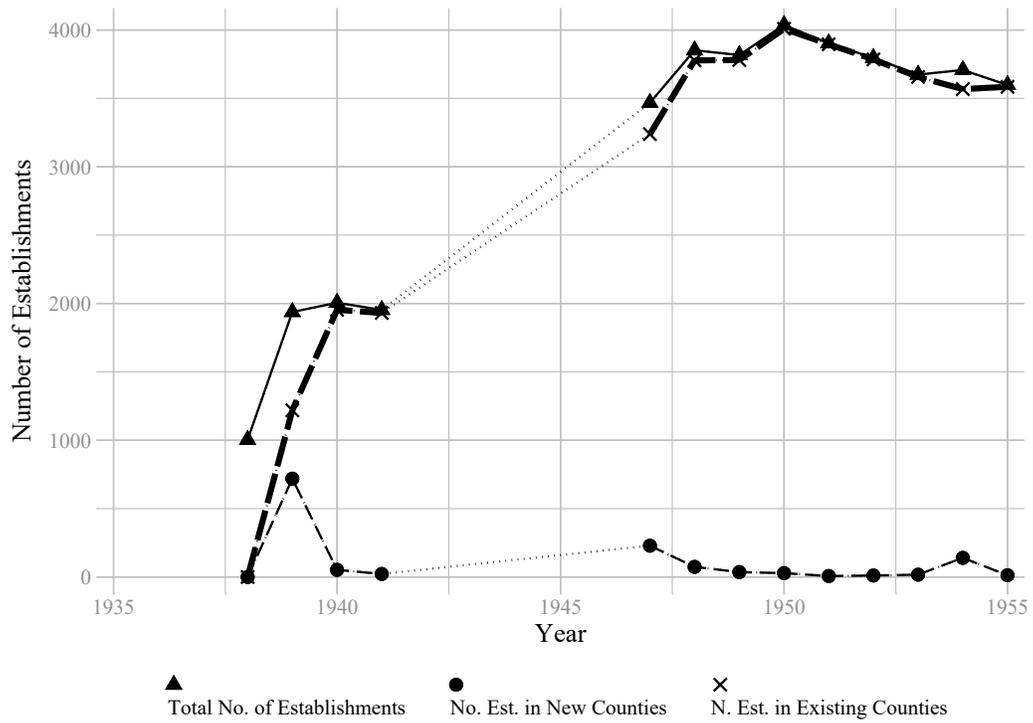


Figure 6: The growth in Green Book establishments among new counties and counties that had at least one Green Book listing.

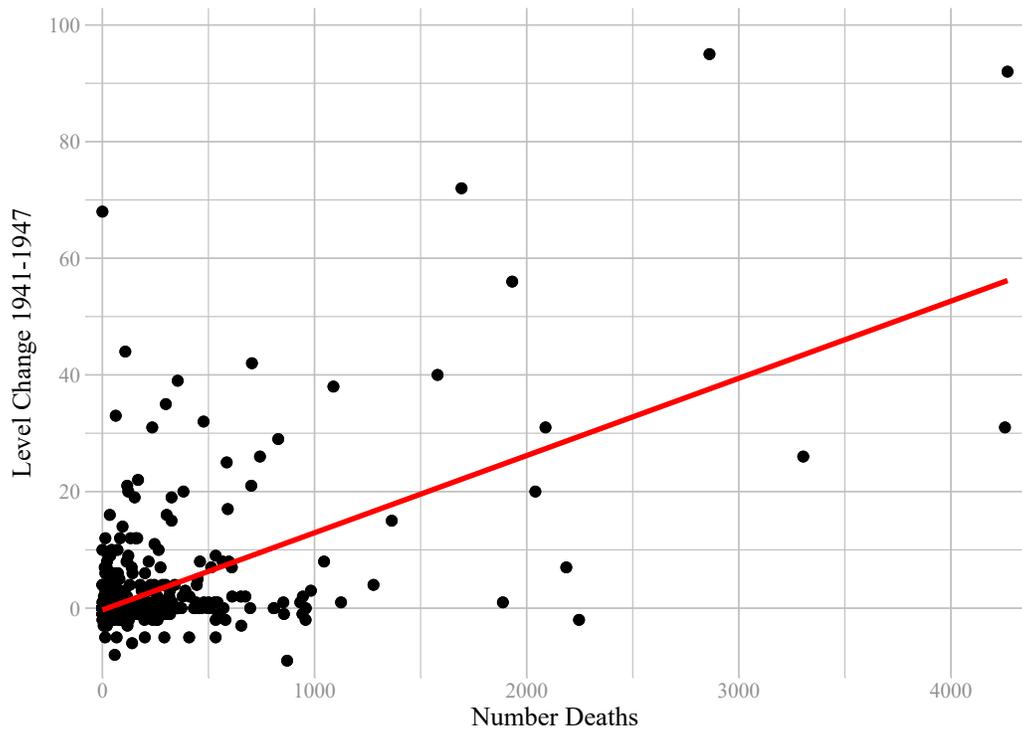


Figure 7: The change in Green Book establishments plotted against the number of white casualties in WWII.

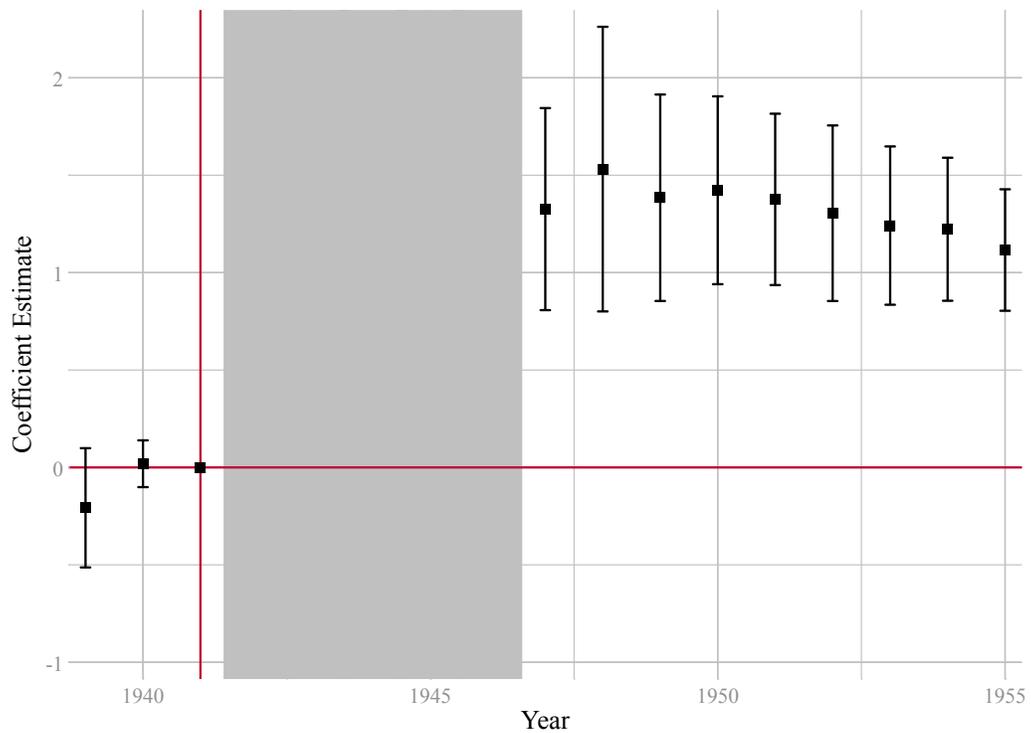


Figure 8: Coefficient estimates and 95% confidence bands from estimating equation 2 using OLS. The dependent variable is the number of Green Book establishments. Each estimate is measured with respect to 1941, so that coefficient estimates represent the differential change in the number of Green Book establishments for an additional 100 white casualties relative to 1941.

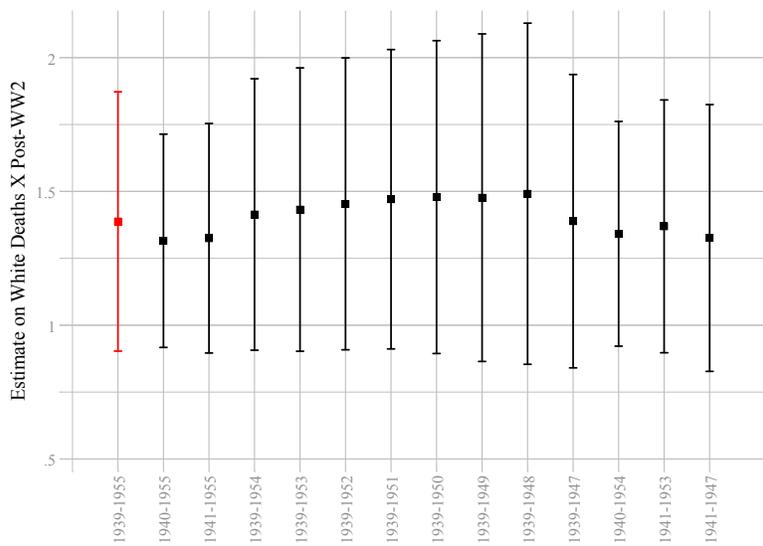


Figure 9: Coefficient estimates and 95% confidence bands from varying the years we include in our study and replacing enlistment with casualties. The first coefficient estimate that appears in red is the treatment effect estimated using our preferred sample, 1939-1955.

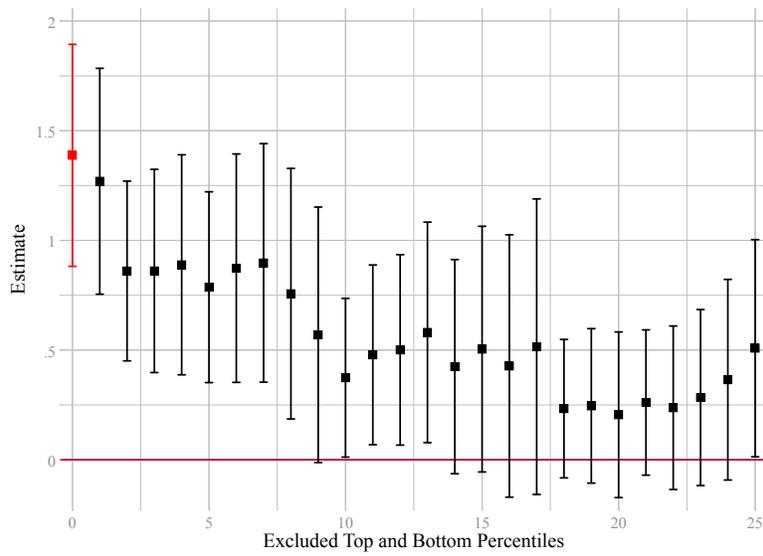


Figure 10: Coefficient estimates and 95% confidence bands from the treatment effect when we systematically drop counties from the top and bottom of the distribution of WWII casualties. The first coefficient estimate that appears in red is the treatment effect estimated using our preferred sample, which includes all counties.

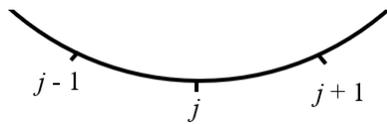


Figure 11: Depiction of firm  $j$ 's neighborhood in a sub-market.

State and County	Number of Establishments	Total number of guest rooms	Receipts (add 000)	Active proprietors and firm members	Employees (full-time and part-time). Average for year.	Total pay roll* (add 000)
<u>ALABAMA</u>	248	9,728	\$4,223	210	2,656	\$998
Baldwin	8	170	29	7	16	4
Butler	3	49	14	3	9	2
Calhoun	7	223	84	5	64	20
Clarke	5	83	22	5	16	2
Colbert	3	137	50	2	35	15
Covington	8	124	34	7	31	8
Dallas	5	247	61	4	45	21
De Kalb	5	134	14	3	10	3
Escambia	3	99	27	2	23	8

Figure 12: An example of hotels by county from the 1935 Census of Business.



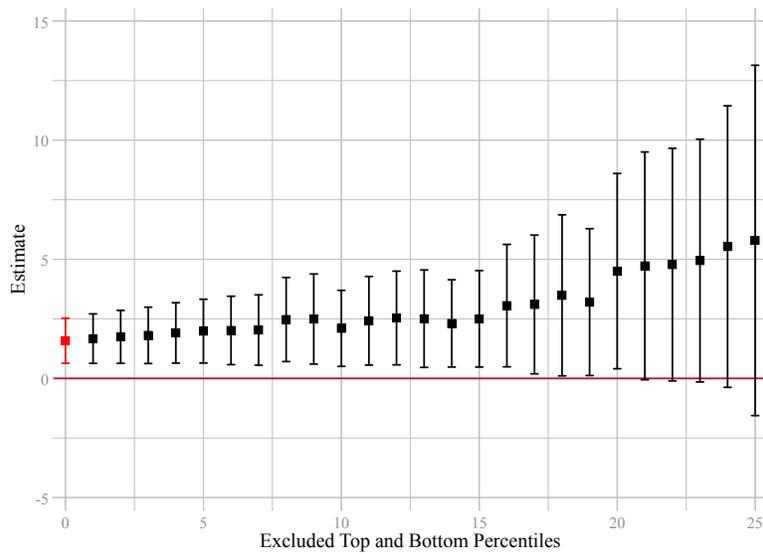


Figure 14: Coefficient estimates and 95% confidence bands from the IV specifications when we systematically drop counties from the top and bottom of the distribution of WWII casualties. The first coefficient estimate that appears in red is the IV estimate using our preferred sample, which includes all counties.

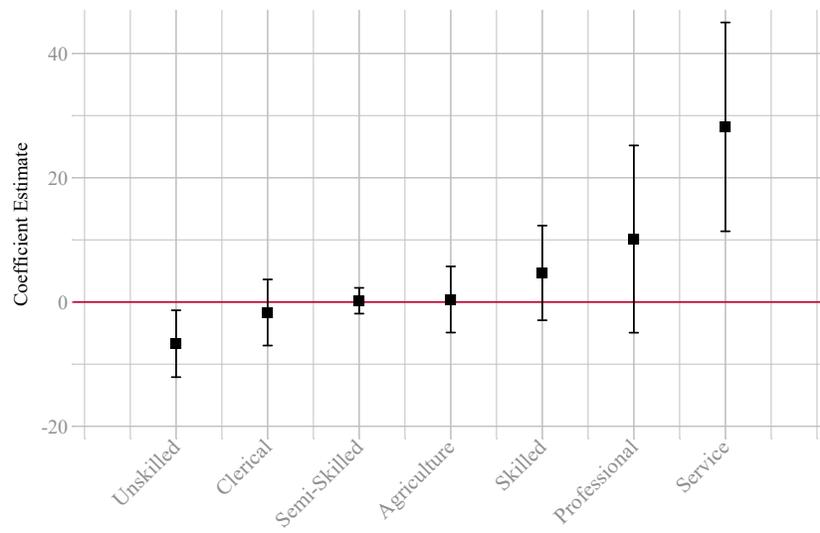


Figure 15: Coefficient estimates and 95% confidence bands from using white casualties among each of the skill levels.

## B. TABLES

Table 1: County Data Descriptive Statistics, Full Panel in 1940

	Listed		Never Listed	
	mean	sd	mean	sd
<b><i>Green Book Listings</i></b>				
Eating/Drinking Places	1	3.8	0	0
Gasoline Station	.18	.6	0	0
Barber/Beauty Shop	.6	2.5	0	0
Informal Lodging	1.9	1.9	0	0
Formal Lodging	1.1	2.1	0	0
<b><i>County Demographics</i></b>				
White population (000s)	158	341	21	39
Black population (000s)	17	35	2.3	5
Black-to-White pop. ratio	.25	.38	.21	.51
Farmland share	.6	.27	.71	.27
Rural Black population share	.34	.3	.54	.44
Between state Black migrant share (over 1935-40)	.067	.071	.051	.14
Within state Black migrant share (over 1935-40)	.56	.12	.36	.31
Black postal workers	11	42	.12	.53
<b><i>Residential Segregation &amp; Discrimination</i></b>				
Dissimilarity index	.64	.18	.5	.32
Isolation Index	.25	.2	.09	.12
Logan & Parman index	.57	.22	.39	.27
Confederate symbol count	1.8	4.4	.32	.98
Historical Black lynchings	1.7	3.7	.71	2
<b><i>World War II</i></b>				
White enlistment (000s)	8.8	19	1.1	2.3
Eligible white draft pop. (males aged 18-64)	518	1161	41	55
White mortality count	244	484	34	63
Black enlistment (000s)	1	2.3	.11	.29
Eligible black draft pop. (males aged 18-44)	51	110	4.2	9.6
Black mortality count	20	48	2.1	6.2
Observations	387		2,718	

Table 2: Effects of White Casualties on the Number of Establishments

	(1)	(2)	(3)	(4)	(5)
# White Deaths $\times$ Post-WW2	1.388*** (0.247)	1.133*** (0.354)	1.388*** (0.258)	1.489*** (0.278)	1.736*** (0.512)
County Controls		X			X
County F.E.			X	X	
Year F.E.		X	X	X	X
State F.E.	X				
State X Year F.E.				X	
County X Linear Trends					X
Observations	37260	37260	37260	37260	37260
Adjusted $R^2$	0.448	0.719	0.892	0.896	0.940
Clusters	3105	3105	3105	3105	3105

Notes: The dependent variable in all columns is the total number of Green Book establishments. County controls include the dissimilarity and isolation indices, Logan-Parman index of segregation, white and black population, manufacturing involvement in 1940, number of black and white renters and owners, percent of county who have electricity, radio, or fridge, share farmland, per capita religiosity, the number of black postal workers, the percent of black rural residents, number of black migrants from within and between states, number of black and white lynchings, number of confederate symbols, education levels for black and white residents, and war contract involvement. For a complete list of variable definitions and sources please see the data section of the Online Appendix. Standard errors clustered by county in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 3: Effects of White Casualties on the Number of Establishments by Region

	(1)	(2)	(3)	(4)	(5)
	Midwest	Northeast	South	West	Total
# White Deaths $\times$ Post-WW2	1.438*** (0.536)	1.399*** (0.451)	1.943*** (0.551)	1.592*** (0.114)	
# White Deaths $\times$ Post-WW2 (Midwest)					1.486*** (0.534)
# White Deaths $\times$ Post-WW2 (Northeast)					1.257*** (0.390)
# White Deaths $\times$ Post-WW2 (South)					1.976*** (0.483)
# White Deaths $\times$ Post-WW2 (West)					1.590*** (0.117)
Observations	12672	2604	17016	4968	37260
Adjusted $R^2$	0.775	0.938	0.864	0.930	0.893
Clusters	1056	217	1418	414	3105
$p$ -value on joint significance test					0.667

Notes: The dependent variable in each regression is the number of Green Book establishments. The title of each column refers to the region evaluated in each specification. All columns include county and year fixed effects. Standard errors clustered by county in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 4: Effects of White Casualties on the Number of Establishments by Industry

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total	Barber & Beauty	Eating & Drinking	Gas & Auto	Formal Lodging	Informal Lodging	Other Retail & Service
# White Deaths $\times$ Post-WW2	1.388*** (0.258)	0.167*** (0.060)	0.738*** (0.185)	0.0611* (0.033)	0.146*** (0.043)	0.0171 (0.013)	0.259*** (0.046)
Observations	37260	37260	37260	37260	37260	37260	37260
Adjusted $R^2$	0.892	0.805	0.866	0.772	0.905	0.854	0.785
Clusters	3105	3105	3105	3105	3105	3105	3105

Notes: The dependent variable in each regression is the number of Green Book establishments. The title of each column refers to the type of establishment counts that are used. Standard errors clustered by county in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 5: Effect of White Casualties on the Number of Green Book Establishments: Alternative Samples and Specifications

	(1) Total	(2) Outside SMA	(3) Inside SMA	(4) All Rural	(5) Some Rural	(6) All Urban	(7) Population Weighted	(8) Dropped P-tiles
# White Deaths $\times$ Post-WW2	1.388*** (0.258)	-0.00271 (0.004)	1.390*** (0.259)	-0.765 (2.275)	1.221*** (0.297)	1.586*** (0.566)	1.268*** (0.293)	1.270*** (0.263)
Observations	37260	37260	37260	1321	5620	30319	37176	36204
Adjusted $R^2$	0.892	0.854	0.896	0.536	0.840	0.929	0.913	0.845
Clusters	3105	3105	3105	1053	1369	2837	3098	3017

Notes: The dependent variable in each regression is the number of Green Book establishments. The title of each column refers to the sample restriction or specification used. All columns include county and year fixed effects. Standard errors clustered by county in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 6: Effects of White Casualties on the Number of Establishments: Intensive vs. Extensive Margins

	(1)	(2)	(3)	(4)
	Total	Pr(GB = 1)	Had GB in 1939	Asinh(# GB)
# White Deaths $\times$ Post-WW2	1.388*** (0.258)	0.00332 (0.002)	1.368*** (0.300)	
ainsh(# White Deaths) $\times$ Post-WW2				0.0646*** (0.009)
Observations	37260	37260	4752	37260
Adjusted $R^2$	0.892	0.856	0.892	0.906
Clusters	3105	3105	396	3105

Notes: The dependent variable in column (1) is the number of Green Book establishments; in column (2) it is an indicator that equals 1 if a county has at least one Green Book establishment in time  $t$ ; in column (3) it is the total number of Green Book establishments for the sample of counties that had at least one Green Book listing in 1939; and in column (4) it is the inverse hyperbolic sine of the total number of Green Book establishments. All columns include county and year fixed effects. Standard errors clustered by county in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 7: Contemporary Relationship between Number of Formal Accommodations and County Population

	(1)	(2)
log(population)	0.630*** (0.026)	0.674*** (0.024)
Adjusted $R^2$	0.623	0.688
State F.E.		X
Clusters	49	49
Observations	2167	2167

Notes: The dependent variable in each column is the natural logarithm of the number of formal accommodations in a county. The 2018 population estimates comes from the U.S. Census Bureau's and the number of hotel and motel establishments come from the U.S. Census Bureau's County Business Patterns (2018). Standard errors clustered by state in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 8: Vacation Travel for Black and White Households

	(1)	(2)
	Travel to visit friend/family	Travel less than 200 miles
Black respondent	-0.0203 (0.033)	-0.0408 (0.058)
Intercept	0.293*** (0.040)	0.284*** (0.067)
Observations	1446	617
Clusters	83	81

Notes: The dependent variable in column (1) is an indicator variable for whether vacation travel would be for visiting a friend or family member and the dependent variable in column (2) is an indicator for whether someone planning a vacation would be traveling less than 200 miles from their residence. The specific questions used to formulate these variables can be found in the data section of the Online Appendix. Standard errors are clustered at the primary sampling unit (city/suburb). \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 9: Effects of White Casualties on the Number of Green Book Establishments Conditional on Census of Business Hotels

	(1)	(2)	(3)	(4)	(5)	(6)
	Total	Total	Total	Hotels	Hotels	Hotels
$\text{asinh}(\# \text{ White Deaths}) \times \text{Post-WW2}$	0.306*** (0.042)	0.313*** (0.043)	0.316*** (0.045)	0.106*** (0.030)	0.126*** (0.031)	0.126*** (0.031)
Census of Business sample		X	X		X	X
Conditional on all hotels			X			X
County F.E.	X	X	X	X	X	X
Year F.E.	X	X	X	X	X	X
Observations	4752	4260	4260	4752	4260	4260
Adjusted $R^2$	0.857	0.861	0.861	0.857	0.860	0.860
Clusters	396	355	355	396	355	355

Notes: All columns are conditional on having at least one Green Book listing in 1939. The dependent variable in columns (1)-(3) is the inverse hyperbolic sine of the number of Green Book establishments; in columns (4)-(6) it is the inverse hyperbolic sine of the number of formal accommodations (hotels). Standard errors clustered by county in parentheses. \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 10: The Relationship Between Firm Ratios and Population Ratios

	Market: Own County			Market: Own+Neighbor		
	(1)	(2)	(3)	(4)	(5)	(6)
asinh(B-W Population Ratio)	0.406 (0.404)			0.262 (0.305)		
asinh(Black Population)		0.0574** (0.023)	0.0306* (0.017)		0.0717** (0.029)	0.0532** (0.021)
asinh(White Population)		-0.0255 (0.074)			0.00200 (0.074)	
asinh(# White Casualties) X post-WWII			0.0273** (0.013)			0.0200* (0.012)
Observations	751	751	751	749	749	749
Adjusted $R^2$	0.440	0.440	0.448	0.435	0.444	0.450
Clusters	396	396	396	395	395	395

Notes: All columns are conditional on having at least one Green Book listing in 1939. The dependent variable in all columns is the inverse hyperbolic sine of the ratio of Green Book to non-Green Book establishments. All columns include county and year fixed effects. Standard errors clustered by county in parentheses. \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 11: First Stage for IV Results of White Casualties on Black/White Population Ratio

	Market: Own County			Market: Own+Neighbor		
	(1)	(2)	(3)	(4)	(5)	(6)
asinh(# White Deaths) $\times$ Post-WW2	0.0215*** (0.004)	0.0108*** (0.003)		0.0200*** (0.003)	0.0114*** (0.003)	
asinh(# White Deaths)			0.0133*** (0.003)			0.0135*** (0.004)
County F.E.	X	X		X	X	
Year F.E.	X	X		X	X	
State $\times$ Year F.E.		X			X	
State F.E.			X			X
Observations	792	792	396	790	790	395
Adjusted $R^2$	0.982	0.988	0.353	0.988	0.993	0.464
Clusters	396	396	46	395	395	46

Notes: The dependent variable in columns (1), (2), (4) and (5) is the inverse hyperbolic sine of the Black-to-White population ratio. In columns (3) and (6) it is the inverse hyperbolic sine of the change in the Black-to-White population ratio. All columns are conditional on having at least one Green Book listing in 1939. Standard errors clustered by county in parentheses in columns (1), (2), (4), and (5) and by state in columns (3) and (6). \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Table 12: IV Results: Change in Market Composition and the Ratio of Non-Discriminatory to Discriminatory Firms

Dependent Variable:	$asinh(\frac{GB}{non-GB})$				$asinh(\Delta \frac{GB}{non-GB})$	
	(1) OLS	(2) IV	(3) OLS	(4) IV	(5) OLS	(6) IV
<i>Panel A: Market: Own County</i>						
asinh(B-W Ratio)	0.406 (0.404)	1.582*** (0.482)	0.0649 (0.496)	2.341** (0.914)		
asinh( $\Delta$ B-W Ratio)					0.0267 (0.263)	2.053** (0.809)
Observations	751	710	751	710	355	355
Clusters	396	355	396	355		
First Stage $F$ -Stat		64.87		31.50		26.14
<i>Panel B: Market: Own + Neighbor Counties</i>						
asinh(B-W Ratio) (All)	0.262 (0.305)	1.395*** (0.478)	-0.188 (0.425)	2.514* (1.396)		
asinh( $\Delta$ B-W Ratio) (All)					-0.228 (0.188)	2.135* (1.197)
Observations	749	708	749	708	354	354
Clusters	395	354	395	354		
First Stage $F$ -Statistic		88.27		25.60		22.09
County F.E.	X	X				
State X Year F.E.			X	X		
State F.E.					X	X

Notes: All columns are conditional on having at least one Green Book listing in 1939. In columns (1)-(4) the dependent variable is the inverse hyperbolic sine of the ratio of Green Book to non-Green Book hotels; in columns (5) and (6) it is the inverse hyperbolic sine of the change in the number of Green Book to non-Green Book hotels between 1940 and 1950. Odd numbered columns are OLS estimates, while even numbered columns are IV estimates. The instrument in columns (2) and (4) is the interaction of the inverse hyperbolic sine of the number of white casualties in WWII and an indicator for the time period after WWII; in column (5) it is the inverse hyperbolic sine of the number of white casualties in WWII. Standard errors are clustered by county in columns (1)-(4) and by state in columns (5) and (6). \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 13: Degree of Competition, Market Composition and the Ratio of GB to non-GB Firms

	(1) Bottom $\frac{1}{3}$	(2) Middle $\frac{1}{3}$	(3) Top $\frac{1}{3}$
asinh(B-W Ratio)	7.840*** (2.176)	-0.453 (0.610)	-0.0925 (0.149)
Observations	228	296	248
Clusters	114	148	124
First Stage <i>F</i> -Statistic	22.17	6.11	19.26

Notes: The dependent variable is the asinh of the ratio of GB to non-GB hotels. Columns (1)-(3) split the sample based on thirds of the distribution of Discriminatory Firms (# 1935 Census of Business Hotels - # Green Book Hotels) divided by the White Population in 1940. All columns include county fixed effects and a year indicator for 1940. Standard errors clustered by county parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 14: Effects of White Casualties on Number of Green Book Establishments Conditional on NAACP Presence and Measures of Economic well-being

Dependent Variable:	# GB Establishments				$asinh(\Delta \frac{GB}{non-GB})$			
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) IV	(7) IV	(8) IV
# White Deaths $\times$ Post-WW2	1.388*** (0.258)	1.389*** (0.266)	1.388*** (0.258)	1.393*** (0.259)				
$\Delta$ B-W Ratio					0.0267 (0.263)	2.053** (0.809)	2.292** (0.899)	1.260** (0.570)
# of NAACP Chapters/Branches		-0.0169 (0.285)						
Has an NAACP Chapter/Branch			-0.106 (0.176)					
$\Delta$ NAACP Chapters							-0.0431 (0.031)	
% Black Employed				-0.0395 (0.306)				
Occupational Rank				-0.000126 (0.016)				
$\Delta$ Avg Black Occ Rank								-0.0321** (0.015)
$\Delta$ Avg Black Employment								0.166* (0.085)
Observations	37260	37260	37260	37260	355	355	355	355
Adjusted $R^2$	0.892	0.892	0.892	0.892	0.099			
Clusters	3105	3105	3105	3105				
First Stage $F$ -Statistic						26.14	22.40	31.43

Note: Columns (1)-(4) include county and year fixed effects. Column (5)-(8) include state fixed effects. Standard errors clustered by county in parentheses in columns (1)-(4) and robust standard errors in parentheses in columns (5)-(8). \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$